

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





JAN 12 1944

468224

## COST OF IRRIGATION WATER IN CALIFORNIA\*

By

Harry F. Blaney, Irrigation Engineer,  
Division of Irrigation,  
Bureau of Agricultural Engineering,  
U. S. Department of Agriculture.

### Introduction

For many years the cost of irrigation water has been a vital subject in California; especially in those sections of the State where water has been increasing in value each year and more difficult to obtain. Bankers, investors, government officials, engineers, and farmers may well ask what expenditure is justified to develop a water supply for the profitable production of the crops that can be raised on the land and what water charge such land can afford to pay. Farmers and prospective farmers also, are in need of such cost data as will enable them to choose crops that may be grown profitably under the prevailing water charges.

In 1923 a field study of the cost of water to irrigators under various types of irrigation enterprises in California was made by the Division of Agricultural Engineering, U. S. Department of Agriculture, in cooperation with the University of California Agricultural Experiment Station, and the State of California Department of Public Works. The principal irrigation enterprises of the State were visited for the purpose of obtaining cost data. The information thus obtained was compiled and issued as Bulletin No. 8, "Cost of Water to Irrigators in California." In 1930 a more intensive survey was made and the results were published as Bulletin No. 36, "Cost of Irrigation Water in California." It is the object of this report to present the essential data given in these bulletins, since they are now out of print.

In California the following types of enterprises furnish irrigation water: public utilities, contract companies, irrigation districts, mutual water companies, individuals, partnerships, associations, private companies, U. S. Bureau of Reclamation, U. S. Indian Service, water works districts, municipal improvement districts, and reclamation districts. However, for the purpose of this report, most of the data collected may be grouped in four classes: Public utilities, mutual water companies, irrigation districts, and farm pumping plants.

In addition to the annual cost of water to the irrigator, Bulletins Nos. 8 and 36 give useful information on the type of irrigation system, locality, age, source of water supply, amount of water delivered, acreage irrigated, crops raised, capital invested and water charges for several years, particularly the years 1922 and 1929. The results are summarized in tables. Cost data presented must be used with judgment in considering the varying factors entering into that cost, and caution should be exercised particularly in comparing cost under one type of enterprise with that under another type, as well as between enterprises of the same type where varying conditions apply. Methods used in distribution of water,

---

\*Abstract of State of California, Dept. of Public Works, Bul. No. 8, "Cost of Water to Irrigators in California", by Harry F. Blaney, and Bul. No. 36, "Cost of Irrigation Water in California", by Harry F. Blaney and Martin R. Huberty, prepared under the direction of W. W. McLaughlin, Chief, Division of Irrigation.







accuracy of measurements of amounts delivered, differences in points of measurement, variations in manner of collection of tolls and methods of assessment, together with diversity in character and amounts of water supply, are factors that render difficult the placing of the cost to the user upon a strictly comparable basis for all enterprises. Data on amounts of water delivered are of varying degrees of accuracy. Some are results of careful measurements or metering. At the other extreme are the estimates of the system engineer or superintendent, based on occasional or periodical gagings and close familiarity with the use of water under the system. Care was taken, however, to have the data present, if not exactly, at least approximately, the true use of water at the point at which the distributing agency measures its delivery. Where a system does not have sufficient water supply or the irrigators receive water from other sources, the fact is so noted by footnotes to the tables.

#### Resume' of Bulletins Nos. 8 and 36.

The factors entering into the cost of irrigation water differ for each type of enterprise; hence they are treated separately under the headings of Public Utilities, Mutual Water Companies, Irrigation Districts and Farm Pumping Plants.

Public Utilities - The public utility or commercial irrigation company\* is an organization designed to construct and operate irrigation works for the profit of persons who build the works and retain temporary or permanent ownership. Most public utility water companies have been financed by private capital. Theoretically, the capital stock represents the investment, or the cost of water rights, development of a water supply, and irrigation works.

The original irrigation enterprises of this type were generally of two classes - those under which water rights were sold for a fixed sum, with the addition of an annual charge for maintenance and operation of the irrigation system, and those under which water was furnished for an annual rental.

The factors that determine the annual cost of water to irrigators are water rates and amount of water delivered. The water rate represents the entire cost to the user and the interest on investment is a matter of concern for the corporation only. Rates established by the California Railroad Commission allow a reasonable profit to the utilities on the valuation, if practicable. In fixing rates the commission considers three items of expense--"fair return on valuation of plant," "depreciation" and "maintenance and operation".

Public utility water rates are not uniform in their units of measurements. About 25 per cent of the companies use the flat rate per year--a fixed amount either per acre per year or per miner's inch per year. Other units used are the acre-foot, cubic foot, cubic foot per second for 24 hours, an irrigation, miner's inch per hour, and miner's inch per 24 hours. The value of the miner's inch also varies in different localities, in most cases being considered as either one-fiftieth or one-fortieth of a second-foot.

---

\*U. S. Dept. of Agr. Tech. Bul. No. 177, "Commercial Irrigation Companies," by Wells A. Hutchins.

---







The range in annual cost of irrigation water under public utilities for the years 1922 and 1929 is summarized in Table 1 in groups comprising principal crops and by character of water supply.

Mutual Water Companies - A mutual water company is defined by the California statutes as "any private corporation or association . . . . organized for the purpose solely of delivering water to its stockholders or members at cost." This type of enterprise also is known under the name "cooperative water company." A mutual company may be considered a special form of private company in which the stock represents water rights and is entirely owned by those to be served.

The affairs of mutual companies are controlled by a board of directors elected annually by the stockholders. The president is elected by the directors from one of their own number. As a rule the secretary keeps the books and records and computes and collects water charges. A superintendent usually is placed in charge of water delivery, operation and maintenance. The number of ditch tenders assisting him in delivering the water depends upon the size of the company.

Shares of stock in mutual water companies are generally issued on the basis of the area to be irrigated. One share of stock per acre is usual, although in one case as many as 100 shares per acre were issued and in other instances one share covers 640 acres. In many cases, however, a share of stock does not represent any unit area of land, but only a pro rata share of the available water supply, and is not appurtenant to the individual holding.

The principal factors in the annual cost of water are annual assessments, water charges, interest on capital stock or capital investment, and amount of water used.

Companies differ to some extent in their finances. Revenue for operation and maintenance may be obtained from either assessments on the stock or water charges. Assessments are one effective means of raising funds as they are a lien against the stock. Collections on account of delinquent assessments are usually enforced by selling the stock at public auction. When water charges are made, collections are usually enforced by refusing to deliver water unless the charges are paid in advance of a certain date. All stock in mutual water companies is assessable, although some companies do not use this method for raising revenue.\*

Many different kinds of rate schedules for water charges are used by the companies. Rates may be on a measured basis of so much per hour-inch, per irrigation, per day-inch, per acre-foot, or per cubic foot, or on a flat rate basis at so much per acre or miner's inch per season, irrespective of the amount of water used. Some companies have constant rates for all water used, while others have different rates for winter and summer or different rates for each month, different rates for day and night use, or a graduated rate decreasing as the amount of water used increases. Some companies have a minimum charge, or collect water charges only on water used in excess of a certain amount per acre.

---

\*U. S. Dept. of Agri. Tech. Bul. No. 82, "Mutual Irrigation Companies", by Wells A. Hutchins.







Table 1. Summary of Cost of Water in California, Public Utilities 1922 and 1929

Crop	:No. of	: Annual cost of irrigation water including			
	:companies :	interest on capital invested			
	:considered:	Per acre		: Per acre-foot	
	:	: Minimum	: Maximum	: Minimum	: Maximum
<u>Northern California</u>		(Year 1922)			
Citrus trees	5	\$5.00	\$12.00	\$1.47	\$6.00
Deciduous trees and vines	12	1.51	12.00	.92	6.01
Alfalfa	4	2.30	6.20	.92	5.04
Rice	2	7.80	8.98	1.30	1.51
All gravity system	12	1.51	12.00	1.30	6.01
<u>Central California</u>					
Citrus trees	None	----	----	----	----
Deciduous trees and vines	15	.56	5.64	.30	4.24
Alfalfa	19	.56	3.00	.30	2.00
Rice	None	----	----	----	----
All gravity system	24	.56	5.64	.30	4.24
<u>Southern California</u>					
Citrus trees	7	7.56	32.67	5.04	25.14
Deciduous trees and vines	7	7.56	25.14	5.04	25.14
Alfalfa	6	5.54	25.14	1.85	25.14
Rice	None	----	----	----	----
All gravity system	6	5.54	25.14	1.85	25.14
All pumping system	3	15.85	32.67	12.10	21.78
<u>Northern California</u>		(Year 1929)			
Citrus trees	2	5.90	7.56	----	----
Deciduous trees	7	2.73	7.56	.78	6.25
Alfalfa	3	2.73	6.47	.78	2.00
All gravity system	6	2.73	7.56	1.50	6.25
<u>Central California</u>					
Deciduous trees	12	.37	9.40	.30	5.00
Alfalfa	14	.37	9.40	.30	5.00
Cotton	11	.37	2.25	.30	1.00
All gravity system	15	.37	9.40	.30	5.00
<u>Southern California</u>					
Citrus trees	8	5.44	72.14	3.63	34.85
Deciduous trees	7	5.44	26.14	5.04	26.14
Alfalfa	3	6.96	17.98	5.04	10.08
All gravity system	6	5.00	26.14	3.63	26.14
All pumping system	5	8.59	72.14	8.40	34.85







The range in annual cost of irrigation water under mutual water companies for the years 1922 and 1929 is summarized in Table 2 in groups comprising principal crops and by character of water supply.

Irrigation Districts - The irrigation district\* may be defined as a public corporation organized under State laws empowering it to issue bonds and levy and collect taxes, with the object of providing funds for a water supply to irrigate lands within its boundaries and for the operation and maintenance of its irrigation system. California irrigation districts are public corporations and agencies of the State, organized under the jurisdiction of the county in which their lands, or the greater part thereof, are situated. The affairs of a district are administered by a board of directors, assessor, tax collector, treasurer and secretary, all of whom are elected except the secretary, who is appointed by the board.

The main factors determining the annual cost of water to irrigators in an irrigation district are district tax, water tolls, amount of water delivered, and interest on capital invested.

Some irrigation districts obtain their funds for operation and maintenance purposes from water tolls, using various units to determine the water charge. Many districts feel that the cost of installing measuring devices and of measuring the amount of water used by each irrigator is prohibitive, hence their water tolls are based on a flat rate per acre. In a few instances the flat rate varies according to the crop grown or whether the water is gravity or pumped. Other districts charge by the acre-foot, hour-inch, or cubic foot, depending upon the kind of measuring device used.

Unit charges may vary according to amount of water used. A few districts assess tolls on the basis of an irrigation, the rate varying with the crop grown or the method of irrigating.

The range in annual cost of irrigation water under irrigation districts for the years 1922 and 1929 is summarized in Table 3 in groups comprising principal crops and by character of water supply.

Farm Irrigation Pumping Plants - The United States census reported 21,561 irrigation pumping plants in California in 1920 and 46,729 in 1930. Most of these plants are owned and operated by individual farmers, although some of the other types of irrigation enterprises depend entirely on pumped water for irrigation. The Census reported 826,846 acres of land irrigated by pumping from wells in 1919, and this increased to 1,453,272 acres in 1929.

The average farmer keeps very few pumping plant records. For this reason it would be necessary to test each plant before any reliable data could be ascertained on cost of pumping water for irrigation.

Many irrigators, when figuring the cost of pumping water, are likely to consider only the actual operating expenses of a plant; but the cost of irrigation by pumping properly includes the cost of fuel or power, attendance and all fixed charges.

Tables 39 and 40 give the cost of water and the results of tests on 72 pumping plants in a few sections of the State.

---

\*For detailed information regarding irrigation districts see Bulletin No. 21, "Irrigation Districts in California," by Frank Adams, Division of Water Resources, Department of Public Works, State of California.

---







Table 2. Summary of Cost of Water in California, Mutual Companies, 1922 and 1929.

Crop	:No. of	: Annual cost of irrigation water including			
	:companies :	interest on capital invested			
	:considered:	Per acre		Per acre-foot	
	:	: Minimum :	Maximum :	Minimum :	Maximum
<u>Northern California</u>		(Year 1922)			
Citrus trees	2	\$1.84	\$6.50	\$0.55	\$3.39
Deciduous trees and vines	9	1.84	7.82	.55	7.82
Alfalfa	8	1.84	7.82	.55	7.82
Rice	3	2.88	13.67	.96	2.44
All gravity system	5	1.84	6.50	.55	3.48
All pumping system	4	5.86	13.67	2.44	7.82
<u>Central California</u>					
Citrus trees	3	4.77	36.17	4.08	10.33
Deciduous trees and vines	24	.83	36.17	.40	27.44
Alfalfa	16	.83	7.60	.40	4.84
Rice	None	----	----	----	----
All gravity system	16	.83	4.40	.40	2.20
All pumping system	7	6.47	36.17	4.03	27.44
<u>Southern California</u>					
Citrus trees	59	2.07	60.07	1.22	50.91
Deciduous trees and vines	32	2.07	41.28	1.22	27.67
Alfalfa	22	5.60	41.28	1.71	16.82
Rice	None	----	----	----	----
All gravity system	34	2.07	33.14	1.22	29.21
All pumping system	24	6.49	60.07	10.73	50.91
<u>Northern California</u>		(Year 1929)			
Citrus trees	2	3.94	5.06	1.08	3.16
Deciduous trees	13	2.10	10.17	1.08	4.62
Alfalfa	9	3.94	10.17	1.08	4.62
Cotton	2	3.80	5.29	2.24	2.78
Rice	6	2.10	20.60	----	----
All gravity system	5	2.10	7.40	1.08	----
All pumping system	12	3.75	10.17	1.61	4.62
<u>Central California</u>					
Citrus trees	2	26.33	49.48	8.78	14.14
Deciduous trees	16	.72	7.83	----	----
Vines	13	.72	26.33	----	----
Alfalfa	22	.72	7.83	----	----
Cotton	10	.72	7.83	----	----
All gravity system	20	.72	3.25	----	----
All pumping system	4	5.95	49.48	----	----
<u>Southern California</u>					
Citrus trees	57	5.06	84.33	2.73	41.27
Deciduous trees	33	5.06	58.52	2.73	38.25
Alfalfa	11	4.77	35.13	2.39	31.45
All gravity system	6	4.77	49.05	2.39	35.04
All pumping system	29	5.32	84.33	2.73	41.27







Table 3. Summary of Cost of Water in California, Irrigation Districts, 1922 and 1929.

Crop	:No. of : :districts : :considered:	Annual cost of irrigation water			
		Per acre		Per acre-foot	
		Minimum	Maximum	Minimum	Maximum
( Y E A R 1 9 2 2 <sup>a/</sup> )					
<u>Northern California</u>					
Citrus trees	5	\$3.28	\$9.60	\$1.13	\$5.64
Deciduous trees and vines	10	3.28	9.60	.78	18.00
Alfalfa	6	3.28	12.00	.78	6.00
Rice	4	3.37	9.33	.37	1.56
All gravity system	5	4.70	9.60	.78	18.00
All pumping system	3	4.08	12.00	1.56	6.00
<u>Central California</u>					
Citrus trees	3	.90	24.69	.60	16.35
Deciduous trees and vines	14	.90	24.69	.53	16.35
Alfalfa	14	.90	9.78	.53	6.23
Rice	1	3.56	3.56	1.11	1.11
All gravity system	8	.90	5.88	.53	2.45
All pumping system	5	7.35	24.69	3.68	16.35
<u>Southern California</u>					
Citrus trees	4	7.97	21.00	2.66	8.90
Deciduous trees and vines	8	4.04	21.00	2.66	22.19
Alfalfa	5	7.97	21.00	2.66	8.90
Rice	None	----	----	----	----
All gravity system	2	4.04	7.97	2.66	3.04
All pumping system	2	16.20	21.00	8.35	10.80
( Y E A R 1 9 2 9 <sup>b/</sup> )					
<u>Northern California</u>					
Citrus trees	7	1.33	11.05	c/	6.46
Deciduous trees	16	1.33	11.05	c/	6.65
Vines	13	1.33	13.72	c/	8.69
Alfalfa	17	1.33	13.72	c/	8.69
Rice	5	4.11	13.72	c/	8.69
All gravity system	16	1.33	11.05	.72	6.65
All pumping system	9	4.11	13.72	c/	8.69
<u>Central California</u>					
Citrus trees	5	1.03	31.29	.73	19.42
Deciduous trees	13	.82	26.85	.68	17.99
Vines	14	.82	31.29	.68	19.42
Alfalfa	22	.82	13.88	.68	8.50
Cotton	13	1.03	9.64	.73	6.41
All gravity system	10	.82	5.07	.73	2.88
All pumping system	13	3.55	31.29	1.63	19.42
<u>Southern California</u>					
Citrus trees	9	4.60	46.58	1.19	116.45
Deciduous trees	9	4.60	36.97	1.19	35.75
Vines	4	4.60	36.97	1.19	26.80
Alfalfa	6	4.60	32.83	1.19	16.93
Miscellaneous	4	4.60	83.90	1.19	36.46
All gravity system	5	4.60	36.97	1.19	32.20
All pumping system	12	8.63	83.90	1.95	116.45

a/ Excluding interest on retired bonds  
b/ Including interest on retired bonds

c/ Minimum occurs in districts that do not measure the water diverted







## Appendix

The following tables are reprinted from Bulletins Nos. 8 and 36:

### Table

4. Cost of water to irrigators, public utility companies in northern, central and southern California, averages for years 1925-29, inclusive, and year 1929, particularly.
5. Cost of water to irrigators, mutual water companies, southern California, 1929.
23. Cost of water to irrigators for general crops, mutual water companies, central California, averages for years 1925-1929, inclusive.
24. Cost of water to irrigators for general crops, mutual water companies, central California, 1929.
25. Cost of water to irrigators for general crops, mutual water companies, northern California, averages for years 1925-1929, inclusive.
26. Cost of water to irrigators for general crops, mutual water companies, northern California, 1929.
27. Cost of water to irrigators for rice, mutual water companies and public utility companies, northern and central California, averages for years 1925-1929, inclusive, and year 1929.
28. Cost of water to irrigators, irrigation districts, northern, central and southern California, 1929.
35. Cost of water for irrigation in California, public utilities in northern, central and southern California, 1922.
36. Cost of water for irrigation in California, irrigation districts in northern, central and southern California, 1922.
37. Cost of water for irrigation in California, mutual water companies in northern and central California, 1922.
38. Cost of water for irrigation in California, mutual water companies in southern California, 1922.
39. Cost of water for irrigation in California, private pumping plants in Sacramento Valley, 1922.
40. Cost of water for irrigation in California, private electric pumping plants in central California, 1923.







TABLE 5  
COST OF WATER TO IRRIGATORS, MUTUAL WATER COMPANIES, SOUTHERN CALIFORNIA, 1929  
Compiled from data furnished by the individual mutual water companies

Name of company	Location	Year organized	Source of water supply	Lift, feet	Percentage of water pumped	Area irrigated, acres					Average duty of water, (amount of water delivered) acre-feet per acre	Capital stock					Factors in annual cost of water						Annual cost of water					
						Citrus trees	Deciduous trees	Alfalfa	Miscellaneous	Total		Number of shares issued	Par value of stock, per share	Market value of stock, per share	Average number of shares, per acre	Value of stock per acre	Interest on value of capital stock per acre at 6 per cent	Average annual assessment per acre, (1925-1929, inclusive)	Water rate, 1929		Water charge per acre, for average amount used	Average debt retired per acre, (1925-1929, inclusive)	For use of one acre-foot only		Per acre for average amount used		Per acre-foot for average amount used	
																			Per hour-inch	Per acre-foot			Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Alta Mutual Water Company	Saticoy	1912	Wells	75	100	500	1,000		300	1,800	1 20	1,800	\$60 00	\$175 00	1 00	\$175 00	\$10.50	\$1 80	\$ .0188	\$11 37	\$13 64	None	\$13 17	\$23 67	\$15 44	\$25 94	\$12 87	\$21 61
Anaheim Union Water Company	Anaheim	1884	Santa Ana River and wells	130-170	72	7,500	500		(*)	8,000	1 60	8,004	100 00	95 00	1 00	95 00	5 70	4 20	.0136	8 23	13 17	\$2 37	10 06	15 76	15 00	20 70	9 38	12 93
Arroyo Ditch and Water Company	Downey	1885	San Gabriel River and wells	450	60	(*)	(*)	(*)	(*)	2,500	0 92	3,600	5 00	4 00	1 00	4 00	0 24	2 80	.0050	3 03	2 79	None	5 83	6 07	5 59	5 83	6 08	6 34
Azusa Irrigating Company	Azusa	1886	San Gabriel River and wells	300	75	3,500	400		100	4,000	1 74	11,890	15 00	100 00	3 00	300 00	18 00	6 60	.0098	5 93	10 32	1 00	11 53	29 53	15 92	33 92	9 15	19 50
Banning Heights Mutual Water Company	Banning	1913	White Water River		0	600				600	1 38	14,000	15 00	15 00	10 00	150 00	9 00	4 10	None	None	None	None	4 10	13 10	4 10	13 10		
Banning Water Company	Banning	1884	Wells	80	98			20	50	3,200	1 95	3,276	50 00	125 00	1 10	137 50	8 25	8 14	None	None	None	None	8 14	16 39	8 14	16 39	5 90	11 88
Base Line Water Company	La Verne	1919	Wells	340	100	390				390	1 95	1,125	100 00	200 00	3 00	600 00	36 00	*3 60	.0316	19 12	37 28	None	22 72	58 72	40 88	76 88	20 95	39 42
Beardslee Water Ditch Company	Duarte	1881	San Gabriel River and wells	175	20	500			20	600	*2 00	1,630	33 00	200 00	1 00	200 00	12 00	9 20	None	None	None	None	9 20	21 20	9 20	21 20	4 60	10 60
Bear Valley Mutual Water Company	Redlands	1906	Santa Ana River																									
Crafton Water Company	Redlands	1886	Bear Valley Mutual Water Company and wells		20	*1,900				*1,900	*2 00	3,500	100 00	150 00	1 00	250 00	15 00	8 80	None	None	None	1 10	7 70	22 70	7 70	22 70	3 85	11 35
Redlands Heights Water Company	Redlands	1891	Crafton and South Mountain Water Companies			1,000				1,000	2 01	1,412	100 00	150 00	1 50	225 00	13 50	27 30	None	None	None	None	27 30	40 80	27 30	40 80	13 58	19 70
Lugonia Park Water Company	Redlands	1894	Bear Valley Mutual Water Company	0	0	200				200	1 40	196	100 00	125 00	1 00	125 00	7 50	17 40	None	None	None	5 88	11 52	19 02	11 52	19 02	8 23	13 58
East Redlands Water Company	Redlands	1887	Crafton Company			443				443	1 17	443	100 00	160 00	1 00	160 00	9 60	11 60	None	None	None	0 65	10 65	20 25	10 65	20 25	9 11	17 30
West Redlands Water Company	Redlands	1887	Bear Valley Mutual Water Company and wells	125	40	806				806	1 43	806	100 00	115 00	1 00	115 00	6 90	14 80	None	None	None	1 85	12 95	19 85	12 95	19 85	9 06	13 87
West Highlands Water Company	Highlands	1887	Bear Valley Mutual Water Company and wells	100-175	25	800				800	2 14	900	200 00	200 00	1 00	200 00	12 00	8 80	None	None	None	1 00	7 80	19 80	7 80	19 80	3 65	9 25
Redlands Water Company	Redlands	1882	Bear Valley Mutual Water Company and city			1,363				1,363	1 93	1,500	100 00	130 00	1 10	143 00	8 58	9 20	None	None	None	None	9 20	17 78	9 20	17 78	4 77	9 22
California Domestic Water Company	Whittier	1902	Wells	35	100	1,330	670			2,000	1 50	8,005	50 00	85 00	1 50	127 50	7 65	16 20	None	None	None	2 62	13 58	21 23	13 58	21 23	9 06	14 15
La Habra Water Company	La Habra	1902	California Domestic Company	175	100	3,000				3,000	1 50	4,997	50 00	137 50	1 50	206 25	12 38	22 50	None	None	None	2 62	19 88	32 26	19 88	32 26	13 25	21 50
Canyon Water Company of Pomona	Pomona	1897	San Antonio River	0	0	2,500				2,500	*1 34	18,401	10 00	15 00	7 36	110 40	6 82	0 22	None	None	None	None	6 00	24 00	6 00	24 00	4 29	17 15
Capistrano Water Company	Capistrano	1892	San Juan Creek and well	30	5	240				400	1 40	421	100 00	300 00	1 00	300 00	18 00	6 00	None	None	None	None	6 00	24 00	6 00	24 00	4 29	17 15
Chino Water Company	Ontario	1905	Wells	185	100		1,000		200	1,200	0 88	999	100 00	75 00	1 00	75 00	4 50	None	.0200	12 10	10 65	1 58	10 52	15 02	9 07	13 57	10 30	15 42
Citizens Land and Water Company	Bloomington	1907	Wells	200	100	4,190	50	60	400	4,700	1 65	5,197	50 00	145 00	1 00	145 00	8 70	*8 40	.0125	7 56	12 47	1 54	14 42	23 12	19 33	28 03	11 72	17 00
Covina Irrigating Company	Covina	1882	San Gabriel River and wells	145	75	4,500				4,500	1 39	10,000	50 00	77 50	3 00	232 50	13 95	19 80	.0021	1 27	1 77	4 50	16 57	30 52	17 07	31 02	12 28	22 31
Cucamonga Water Company	Cucamonga	1887	Wells	277	100	2,600	800		1,100	4,500	1 29	4,443	100 00	125 00	1 50	187 50	11 25	22 35	None	None	None	2 70	19 65	30 90	19 65	30 90	15 25	23 95
Del Monte Irrigation Company	Pomona	1887	Wells	300	100	1,800			10	1,810	2 79	22,650	10 00	18 00	12 50	225 00	13 50	28 12	None	None	None	None	28 12	41 62	28 12	41 62	10 08	14 91
Del Norte Water Company	Ventura	1910	Wells	300	100	1,789	70		689	2,478	1 16	2,817	50 00	60 00	1 00	60 00	3 60	2 60	.0300	18 15	21 05	None	20 75	24 35	23 65	27 25	20 38	23 50
Dominguez Water Company	Compton	1911	Wells	70	100	(*)		(*)	Major	*5,000	1 08	20,000	10 00	None	1 00	50 00	3 60	None	.0324	19 60	21 17	3 40	16 20	19 20	17 77	20 77	16 45	19 23
Duarte Irrigation and Canal Company	Duarte	1890	San Gabriel River and wells			1,200				1,200	*1 55	6,295	10 00	100 00	5 00	500 00	30 00	2 00	.0125	7 56	11 72	None	9 56	39 56	13 72	43 72	8 85	28 20
Escondido Mutual Water Company ("B" Stock)	Escondido	1905	San Luis Rey River	0	0	4,000			1,000	5,000	1 40	384,304	1 00	4 00	100 00	225 00	13 50	*30 02	.0083	5 02	7 03	1 50	33 54	47 04	35 55	49 05	25 39	35 64
Etiwanda Water Company	Etiwanda	1882	Canyons and well	400	70	1,500			500	2,000	1 29	2,300	100 00	400 00	1 10	440 00	26 40	9 13	None	None	None	2 50	14 50	25 50				





IRRIGATION PUBLICATIONS,  
BUREAU OF AGRICULTURAL ENGINEERING, U. S. DEPARTMENT OF AGRICULTURE.

Copies of the following publications issued by the Bureau of Agricultural Engineering may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., for amounts shown,

Department Bulletins:

376 D. Flow of Water in Wood-Stave Pipe. (1925).....	25¢
852 D. Flow of Water in Concrete Pipe. (1920).....	25¢
1026 D. Irrigation in Northern Colorado. (1922).....	25¢
1221 D. The Capillary Distribution of Moisture in Soil Columns of Small Cross Section. (1924).....	5¢
1340 D. Irrigation Requirements of the Arable Lands of the Great Basin. (1925).....	10¢

Technical Bulletins:

36 T. Irrigation Requirements of the Arid and Semiarid Lands of the Missouri and Arkansas River Basins (1928).....	20¢
47 T. Delivery of Irrigation Water. (1928).....	10¢
67 T. Silt in the Colorado River and Its Relation to Irrigation. (1928).....	20¢
72 T. The Irrigation of Cotton. (1928).....	10¢
82 T. Mutual Irrigation Companies. (1929).....	10¢
150 T. Flow of Water in Riveted Steel and Analogous Pipes. (1929)...	30¢
177 T. Commercial Irrigation Companies. (1930).....	10¢
185 T. Irrigation Requirements of the Arid and Semiarid Lands of the Southwest. (1930).....	15¢
200 T. Irrigation Requirements of the Arid and Semiarid Lands of the Columbia River Basin. (1930).....	15¢
254 T. Irrigation Districts, Their Operation and Financing. (1931)...	15¢
271 T. Evaporation from Free Water Surfaces (1931).....	25¢

Farmers' Bulletins:

805 F. Drainage of Irrigated Farms. (1926).....	5¢
828 F. Farm Reservoirs. (1917).....	5¢
864 F. Practical Information for Beginners in Irrigation. (1932).....	5¢
1243 F. The Border Method of Irrigation. (1927).....	5¢
1348 F. The Corrugation Method of Irrigation. (1931).....	5¢
1404 F. Pumping from Wells for Irrigation. (1928).....	5¢
1518 F. Orchard Irrigation. (1927).....	5¢
1529 F. Spray Irrigation in the Eastern States. (1927).....	5¢
1556 F. Irrigation of Small Grain. (1928).....	5¢
1630 F. Irrigation Practices in Growing Alfalfa. (1930).....	5¢
1635 F. Surface Irrigation in Eastern States. (1930).....	5¢
1683 F. Measuring Water in Irrigation Channels. (1932).....	5¢

Department Circular:

72 D.C. Financial Settlements of Defaulting Irrigation Enter- prises. (1929).....	10¢
--	-----

Circular:

195 C. Tests of Spray Irrigation Equipment. (1931).....	10¢
---	-----

Miscellaneous Publication:

103 M.P. Summary of Irrigation-District Statutes of Western States. (1931).....	20¢
--	-----





TABLE 23  
COST OF WATER TO IRRIGATORS FOR GENERAL CROPS, MUTUAL WATER COMPANIES, CENTRAL CALIFORNIA, AVERAGES FOR YEARS 1925-1929, INCLUSIVE  
Compiled from data furnished by the individual mutual water companies

Name of company	Location	County or counties	Year organized	Source of water supply	Character of water supply <sup>a</sup>	Approximate percentage of water pumped	Approximate average lift, feet	Approximate gross area covered by stock, acres	Capital stock				Approximate capital investment, per acre	Approximate average area irrigated annually	Approximate average annual amount of water in acre-feet, per acre		Factors in the annual cost of water				Average annual cost of water with and without interest on capital stock or capital investment				
									Number of shares of stock outstanding	Usual number of acres, per share	Approximate market value of stock						Average annual assessment, per acre	Average water charges		Interest at 6 per cent		Per acre		Per acre-foot	
											Per share	Per acre						Per acre-foot	Per acre for average amount used	Approximate market value of capital stock, per acre	Approximate capital investment, per acre	Without interest	With interest	Without interest	With interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
Columbia Canal Company	Los Banos	Madera	1826	San Joaquin River	A	0	0	16,500	16,500	1	0	0			*2.2		b\$1 00				\$0 30	\$1 00			\$0 45
Consolidated Peoples Ditch Company	Farmersville	Tulare	1874	Kaweah River	B	0	0	15,500	9,322	1.67	\$35 00	\$21 00				*4.0	0 48		\$1 26		0 48	\$1 74			
Evans Ditch Company	Visalia	Tulare	1854	Kaweah River	C	0	0	2,500	992	2.5	50 00	20 00				*2.8	1 64		1 20		1 64	2 84			
Farmers Ditch Company	Tulare	Tulare	1875	Kaweah River	D	0	0	8,000	199.25	40	400 00	10 00				*2.7	0 42		0 60		0 42	1 02			
Firebaugh Canal Company	Firebaugh	Fresno	1914	San Joaquin River	A	100	14-42	23,475	23,475	1	0	0	\$32 50		*2.0	*2.6	3 80			1 95	3 80	5 75	1 90		\$2 87
First Edison Well Company	Edison	Kern	1909	Five deep wells	A	100	182-250	394	394.46	1	0	0	d105 00	410	2.7	2.7	*1 67	\$6 23	\$16 80		*16 80	*23 10	6 23		8 55
Freemont Irrigation Association	Tracy	San Joaquin	1920	San Joaquin River	A	100	14	800	800	1	0	0		600	*2.0	2.5	*3 90				3 90			1 95	
Jacob Rancho Water Company	Lemoore	Kings	1908	Lemoore Canal and Last Chance Ditch <sup>b</sup>	C	0	0	11,013	11,013.5	1	15.87	1 87				0 68			0 85		0 68	1 03			
Jennings Ditch Company	Visalia	Tulare		Kaweah River <sup>1</sup>	C	0	0	800	80	10	100 00	10 00				*4.8	3 30		0 60		3 30	3 90			
Last Chance Water Ditch Company	Hanford	Kings	1873	Kings River	C	0	0	29,000	45	640	5,000 00	7 80				*2.0	0 62		0 47		0 62	1 09			
Lemoore Canal and Irrigation Company	Lemoore	Kings	1873	Kings River	B	0	0	52,300	53	640	7,500 00	11 70				*2.5	*0 75		0 70		0 60	1 30			
Mathews Ditch Company	Visalia	Tulare		Kaweah River <sup>1</sup>	C	0	0	1,150	768	1.5	10 00	6 67				*4.1	1 17		0 40		1 17	1 57			
Melga Canal Company	Guernsey	Kings	1913	Peoples Ditch, Settlers Ditch and Lakeside Ditch <sup>1</sup>	C	0	0	7,993	7,997	1	0	0	13 30			1 25				1 25	2 05				
Modoc Ditch Company	Visalia	Tulare	1891	Kaweah River <sup>1</sup>	D	0	0	4,000	100	40	500 00	12 50				*2.8	0 75		0 75		0 75	1 50			
Oakes Ditch Company	Visalia	Tulare	1901	Kaweah River	C	0	0	1,000	34	30	200 00	6 67				*2.3	0 67		0 40		0 67	1 07			
Patterson Water Company	Patterson	Stanislaus	1910	San Joaquin River	A	100	28-84	14,500	14,500	1	0	0	13 80	14,000	2.0	2.7	7 00	m3 50	0	0 83	7 00	7 83	3 50		3 92
Peoples Ditch Company	Hanford	Kings	1873	Kings River	B	0	0	*44,000	63.27	640	10,000 00	15 60				*3.6	0 81		0 94		0 81	1 75			
Persian Ditch Company	Visalia	Tulare		Kaweah River	C	0	0	3,500	14,673	.25	2 00	8 00				*2.2	0 96		0 48		0 96	1 44			
Poso Canal Company <sup>c</sup>	Los Banos	Fresno and Merced	1926	San Joaquin River <sup>c</sup>	A	0	0	50,248	50,248	1	0	0			*2.6		b1 62				e2 87			*1 10	
San Luis Canal Company	Los Banos	Merced	1913	San Joaquin River	A	0	0	47,538	47,538	1	0	0			*2.2		b1 75				*3 37			*1 30	
Settlers Ditch Company	Hanford	Kings	1888	Peoples Ditch <sup>g</sup>	B	0	0	*5,300	34	320	5,000	15 60				*3.3	1 08		0 94		1 08	2 02			
Second Edison Well Company	Edison	Kern	1909	Four deep wells	A	100	225-365	276	275.81	1	0	0	d170 00	300	3.0	3.0	*12 60	10 71	32 13		*32 13	*42 33	10 71		14 11
Uphill Ditch Company	Visalia	Tulare	1901	Kaweah River <sup>1</sup>	D	0	0	1,900	700	2.7	25 00	9 25				*2.9	0 89		0 55		0 89	1 44			
Watson Ditch Company	Visalia	Tulare		Kaweah River <sup>1</sup>	B	0	0	2,900	585	5	100 00	20 00				*2.2	1 32		1 20		1 32	2 52			

\* Estimated.  
<sup>a</sup> Character of water supply indicated by the following letters: A—Usually ample throughout season. B, C, D—Degrees of deficiency during latter part of season. Gravity supply with no storage. Supplemented by private pumping from wells. B indicates an insufficient but better water supply than C, and C a better supply than D.  
<sup>b</sup> Years 1928 and 1929 only.  
<sup>c</sup> Based on total number of shares of stock in company and usual number of shares per acre.  
<sup>d</sup> Average capital investment during five-year period.  
<sup>e</sup> Assessments levied for new construction only. This figure not included in annual cost of water.  
<sup>f</sup> Does not include any allowance for depreciation of pumping plants.  
<sup>g</sup> Average for years 1927 to 1929, inclusive.  
<sup>h</sup> Jacob Rancho Water Company owns 8,347 shares of stock in Lemoore Canal and Irrigation Company, and 7/16 of a share of stock in Last Chance Water Ditch Company.  
<sup>i</sup> Based upon approximate flow of water in Lemoore Canal and Irrigation Company and Last Chance Water Ditch Company.  
<sup>j</sup> Diversion from St. Johns River Branch of Kaweah River.  
<sup>k</sup> Includes fifteen cents per acre chargeable to capital account and not included in annual cost of water.

<sup>1</sup> Melga Canal Company owns stock in the following ditch companies: Peoples Ditch Company, 6,705 shares; Settlers Ditch Company, 5,516 shares and Lakeside Ditch Company, 1,797.2 shares. Lakeside ditch diverts from St. Johns Branch of Kaweah River.  
<sup>2</sup> For water used in excess of two acre-feet per acre.  
<sup>3</sup> Exclusive of Corcoran Irrigation District.  
<sup>4</sup> Water rights held by San Joaquin and Kings River Canal and Irrigation Company, Poso Canal Company pays the rates of the serving public utility company and has been included under that company in Table 4.  
<sup>5</sup> Water charge of San Joaquin and Kings River Canal and Irrigation Company. Fresno County, \$1.25; Merced County, \$1.75. Rates in effect in 1930 uniform for all counties: rice, \$7.50 per acre per season; general crops, \$2.75; winter irrigation of grain and pasture, \$1.50; or measured rate of \$1.15 per acre-foot.  
<sup>6</sup> Settlers Ditch Company owns 16,083 shares of stock in Peoples Ditch Company. Some of the stock in Settlers Ditch Company is owned by Corcoran Ditch Company and the water users under Riverside Ditch.  
<sup>7</sup> Area covered by stock in Settlers Ditch Company owned by users obtaining water direct from Settlers Ditch exclusive of Corcoran Irrigation District, Melga Canal Company, etc.  
<sup>8</sup> Fresno County.  
<sup>9</sup> Merced County.





TABLE 24  
COST OF WATER TO IRRIGATORS FOR GENERAL CROPS, MUTUAL WATER COMPANIES, CENTRAL CALIFORNIA, 1929  
Compiled from data furnished by the individual mutual water companies

Name of company	Area irrigated, 1929		Approximate average amount of water in acre-feet per acre		Factors in the annual cost of water						Average annual cost of water with and without interest on capital stock or capital investment			
					Assessment for 1929, per acre	Water charges			Interest at 6 per cent on					
	Total area irrigated, acres	Crops, with acreages if available	Delivered	Diverted		Rate schedule	Per acre-foot	Per acre for average amount used	Approximate market value of capital stock, per acre	Approximate capital investment per acre				
											Per acre	With interest	Without interest	Per acre-foot
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Columbia Canal Company.....	*9,707	*Grain, 4,627; pasture, 2,991; cotton, 1,935; alfalfa, 281; other, 73.....	*2.2		\$1 00	None				\$0 30	\$1 00	\$1 30	\$0 45	\$0 59
Consolidated Peoples Ditch Company.....		Deciduous trees, vines, alfalfa, cotton, corn.....		b3.3	0 51	None			\$1 26		0 51	1 77		
Evans Ditch Company.....		Vines, deciduous trees, alfalfa, cotton.....		b2.4	1 20	None			1 20		1 20	2 40		
Farmers Ditch Company.....		Alfalfa, deciduous trees, cotton, vines.....		b1.5	0 12	None			0 60		0 12	0 72		
Firebaugh Canal Company.....	18,354	Cotton, 13,743; grain, 4,085; alfalfa, 304; vines, 162; beans, 60.....	*2.0		4 00	None				1 95	4 00	5 95	2 00	2 98
First Edison Well Company.....	412	Citrus, 306; olives, 86; grapes, 20.....	3.0	3.0	*5 40	(d)	\$6 51	\$19 53		6 80	*19 53	*26 33	*6 51	*8 78
Freemont Irrigation Association.....	649	Alfalfa and grain.....	*2.2	2.8	3 55	None					3 55		1 61	
Jacob Rancho Water Company.....		Alfalfa, grain, field crops.....			0 80	None				0 35	0 80	1 15		
Jennings Ditch Company.....		Alfalfa, deciduous trees, vines.....		b4.1	2 05	None			0 60		2 05	2 65		
Last Chance Water Ditch Company.....		Vines, deciduous trees, grain, alfalfa.....		b1.3	0 62	None			0 47		0 62	1 09		
Lemoore Canal and Irrigation Company.....		Alfalfa, grain, deciduous trees, vines.....		b1.7	*0 94	None			0 70		0 79	1 49		
Mathews Ditch Company.....		Alfalfa, deciduous trees, corn, grain.....		b3.5	0 83	None			0 40		0 83	1 23		
Melga Canal Company.....		Alfalfa, cotton, grain, corn.....			1 00	None				0 80	1 00	1 80		
Modoc Ditch Company.....		Alfalfa, deciduous trees, vines, corn.....		b2.2	0 75	None			0 75		0 75	1 50		
Oakes Ditch Company.....		Deciduous trees, alfalfa, vines, corn.....		b1.9	0 83	None			0 40		0 83	1 23		
Patterson Water Company.....	14,000	Alfalfa, 12,250; deciduous trees, 1,000; vines, 500; cotton, 100; rice, 100; truck, 50.....	2.0	2.6	7 00	(e)	3 50			0 83	7 00	7 83	3 50	3 92
Peoples Ditch Company.....		Vines, deciduous trees, alfalfa, grain, field crops.....		b2.5	0 90	None			0 94		0 90	1 84		
Persian Ditch Company.....		Alfalfa, deciduous trees, cotton, corn.....		b1.2	0 80	None			0 48		0 80	1 28		
Poso Canal Company <sup>b</sup> .....	*20,114	*Rice, 4,297; grain, 4,227; cotton, 4,129; pasture, 6,160; alfalfa, 1,168; deciduous trees and garden, 133.....	*2.6		1 50	b1 25		11 25			j2 75	j2 75	j1 06	j1 06
						b1 75		k1 75			k3 25	k3 25	k1 25	k1 25
San Luis Canal Company.....	*22,078	*Grain, 6,871; pasture, 5,550; cotton, 5,312; alfalfa, 3,586; other, 760.....	*2.2		1 75	None				0 27	1 75	2 02	0 80	0 92
Second Edison Well Company.....	300	Citrus.....	3.5	3.5	*22 60	(f)	10 71	37 48		12 00	*37 48	*49 48	*10 71	*14 14
Settlers Ditch Company.....		Alfalfa, deciduous trees, vines, pasture.....		b2.3	1 20	None			0 94		1 20	2 14		
Uphill Ditch Company.....		Alfalfa, deciduous trees, vines, corn.....		b2.4	0 74	None			0 55		0 74	1 29		
Watson Ditch Company.....		Alfalfa, deciduous trees, cotton, corn, vines.....		b2.0	1 30	None			1 20		1 30	2 50		

\*Estimated.  
a Year 1930.  
b Based on total number of shares of stock in company and usual number of shares per acre.  
c Assessments levied for new construction only. This figure not included in annual cost of water.  
d \$15.50 per 1440 hour-inches. Inch equals one-fiftieth cubic foot per second.  
e Does not include any allowance for depreciation of pumping plants.  
f Includes 15 cents per acre chargeable to capital account and not included in annual cost of water.  
g For water in excess of two acre-feet per acre. Excess water \$3.50 per acre-foot.  
h Poso Canal Company is served by the San Joaquin and Kings River Canal and Irrigation Company, pays the rates of that company and has been included with that company in Table 4. The water charges of the serving public utility company were \$1.25 and \$1.75 per acre in Fresno and Merced counties, respectively. Rates in effect in 1930 were uniform for all counties: rice, \$7.50 per acre per season; general crops, \$2 75; winter irrigation of grain and pasture, \$1.50; or a measured rate of \$1.15 per acre-foot.  
i Rate \$25.50 per 1440 hour-inches. Inch equals one-fiftieth cubic foot per second.  
j Fresno County.  
k Merced County.





TABLE 25  
COST OF WATER TO IRRIGATORS FOR GENERAL CROPS, MUTUAL WATER COMPANIES, NORTHERN CALIFORNIA, AVERAGES FOR YEARS  
1925-1929, INCLUSIVE  
Compiled from data furnished by the individual mutual water companies

Name of company	Location	County or counties	Year organized	Source of water supply	Character of water supply <sup>a</sup>	Approximate percentage of water pumped	Approximate average lift, feet	Gross area covered by stock, acres	Approximate capital investment, per acre	Approximate average area irrigated annually	Approximate average annual amount of water in acre-feet per acre		Factors in annual cost of water				Average annual cost of water with and without interest on capital investment			
											Delivered	Diverted	Average annual assessment, per acre	Average water charges		Interest at 6 per cent on approximate capital investment, per acre	Per acre		Per acre-foot	
														Per acre-foot	Per acre for average amount used		Without interest	With interest	Without interest	With interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Alicia Mutual Water Company	Marysville	Yuba	1917	Feather River	A	100	18	3,757	<sup>b</sup> \$34 00	<sup>c</sup> 1,380			\$0 70		\$4 08	\$2 04	\$4 78	\$6 82		
Colusa Irrigation Company	Colusa	Colusa		Sacramento River	A	100	23	2,000	<sup>d</sup> 10 00	760		2.2	0 0	<sup>e</sup> \$1 72	3 78	0 60	3 78	4 38	<sup>e</sup> \$1 72	\$2 00
Durham State Land Settlement Water Users Association	Durham	Butte	1918	Butte Creek	A	0	0	3,600	<sup>b</sup> 45 00	<sup>e</sup> 2,750	2.0		0 06		<sup>f</sup> 1 60	2 70	1 66	4 36	0 83	2 18
Elkhorn Mutual Water Company	Sacramento	Sacramento	1918	Sacramento River	A	100	22	6,000		2,670	<sup>g</sup> 1.2	2.4	<sup>h</sup> 1 30	3 00	3 60		4 90		4 08	
Feather River Water Company	Yuba City	Sutter	1926	Feather River	A	100	12			275		2.4	3 76		0		3 76		<sup>i</sup> 1 57	
Garden Highway Mutual Water Company	Yuba City	Sutter	1923	Feather River	A	100	12	2,600	<sup>b</sup> 10 00	<sup>c</sup> 1,740		<sup>g</sup> 2.3	3 00		0	0 60	3 00	3 60	<sup>i</sup> 1 30	<sup>i</sup> 1 56
Hallwood Irrigation Company	Marysville	Yuba	1910	Yuba River	A	0	0	6,400	<sup>d</sup> 10 00	<sup>e</sup> 4,470		<sup>g</sup> 6.0	1 80	0	0	0 60	1 80	2 40		
Improvement Mutual Water Company	Robbins	Sutter	1923	Sacramento River <sup>h</sup>	A	100	18		<sup>b</sup> 45 00	<sup>c</sup> 1,260	12.2		1 06	0 97	2 13	2 70	3 19	5 89	1 45	2 68
Loam Ridge Mutual Water Company	Orland	Glenn	1913	Wells	A <sup>(1)</sup>	100	40	1,200			1.7	1.9	1 01	1 95	3 32	1 38	4 33	5 71	2 55	3 35
Natomas Central Mutual Water Company	Sacramento	Sacramento and Sutter	1921	Sacramento River	A	100	22	19,400		3,100	<sup>g</sup> 1.5		<sup>h</sup> 0 46	3 20	4 80		5 26		3 51	
Natomas Riverside Mutual Water Company	Sacramento	Sacramento	1920	Sacramento River	A	100	23	3,526	<sup>b</sup> 23 00	1,590	<sup>g</sup> 1.5	3.9	<sup>h</sup> 1 00	4 00	6 00	7 00	7 00		4 67	
Orangevale Water Company	Orangevale	Sacramento		North Fork Ditch Company	A	0	0	2,185	<sup>d</sup> 20 00			<sup>h</sup> 1.5	<sup>h</sup> 0 46		<sup>b</sup> 5 80	1 20	6 16	7 36		
Plumas Mutual Water Company	Marysville	Yuba	1927	Feather River	A	100	18	3,000	<sup>d</sup> 30 00	1,230			0	4 20	1 80	4 20	6 00			
Roberts Ditch Irrigation Company	Colusa	Colusa	1902	Sacramento River	A	100	25	1,880	<sup>m</sup> 10 00	700		3.7	0	<sup>e</sup> 1 54	5 70	0 60	5 70	6 30	<sup>e</sup> 1 54	<sup>e</sup> 1 70
Stanford Vina Ranch Irrigation Company	Vina	Tehama	1920	Deer Creek	A	0	0	5,603		3,080	4.3	5.4	0 80	0	0	0 80		0 19		
Sutter Mutual Water Company	Robbins	Sutter	1919	Sacramento River	A	100	17	45,140	<sup>b</sup> 52 00	<sup>e</sup> 22,400	1.7		0 95	0 95	1 61	3 12	2 56	5 68	1 50	3 24
Swinford Tract Irrigation Company	Colusa	Colusa	1920	Sacramento River	A	100	26	145	<sup>d</sup> 50 00	140		1.4	4 10	<sup>e</sup> 1 31	1 84	3 00	5 94	8 94	<sup>e</sup> 4 17	<sup>e</sup> 6 38
Western Canal Company	Oroville	Butte and Glenn	1915	Feather River and Lake Almanor	A	0	0	27,856	<sup>b</sup> 30 00	<sup>c</sup> 10,700	2.2	<sup>e</sup> 7.7	0	1 00	2 20	1 80	2 20	4 00	1 00	1 82
Orland Project, United States Bureau of Reclamation	Orland	Glenn	1907	Stony Creek	A	0	0	20,142	<sup>b</sup> 28 16		3.3	4.7	<sup>e</sup> 1 73	<sup>p</sup> 0 10-0 60	0 12	1 69	1 85	3 54	0 57	1 08

\* Estimated.  
<sup>a</sup> Character of water supply: A—Usually sufficient throughout irrigation season.  
<sup>b</sup> Investment in irrigation system.  
<sup>c</sup> Includes rice.  
<sup>d</sup> Par value of capital stock.  
<sup>e</sup> Per acre-foot diverted (pumped).  
<sup>f</sup> Maintenance charge.  
<sup>g</sup> Estimated for general crops only.  
<sup>h</sup> Joint diversion with Sutter Mutual Water Company.  
<sup>i</sup> Average for 1925-1928. Only rice grown in 1929.  
<sup>j</sup> Company supply, supplemented by three private wells, furnishes ample water to area now irrigated.  
<sup>k</sup> Estimate based on gross area.  
<sup>l</sup> Includes \$0.10 per acre deposited in sinking fund and not included in annual cost of water.  
<sup>m</sup> Present market value of stock.  
<sup>n</sup> Amount paid on construction charges in 1927 taken as average for 1925-1929.  
<sup>o</sup> Operation and maintenance charge. Does not include annual repayments of construction charges amounting to \$3.30 per acre.  
<sup>p</sup> Charges for excess water: \$0.10 per acre-foot for natural flow water and \$0.60 per acre-foot for stored water.





TABLE 26  
COST OF WATER TO IRRIGATORS FOR GENERAL CROPS, MUTUAL WATER COMPANIES, NORTHERN CALIFORNIA, 1929  
Compiled from data furnished by the individual mutual water companies

Name of company	Area irrigated		Approximate average amount of water in acre-feet per acre		Factors in annual cost of water					Average annual cost of water with and without interest on capital investment			
					Assessment for 1929, per acre	Water charges			Interest at 6 per cent on approximate capital investment, per acre	Per acre		Per acre-foot	
	Total area irrigated, acres	Crops, with acreages if available	Delivered	Diverted		Rate schedule	Per acre-foot	Per acre for average amount used		Without interest	With interest	Without interest	With interest
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Alicia Mutual Water Company.....	1,400	Deciduous trees, 663; alfalfa and miscellaneous, 337; rice, 400.....			\$0 65	Actual cost on acreage basis.....		\$4 86	\$2 04	\$5 51	\$7 55		
Colusa Irrigation Company.....	852	Alfalfa and deciduous trees.....		2 4	0	\$3.50 per hour for flow of pump.....	\$1 87	4 45	0 60	4 45	5 05	<sup>a</sup> \$1 87	<sup>a</sup> \$2 10
Durham State Land Settlement Water Users Association.....	<sup>*</sup> 2,750	Beans and other field crops, deciduous trees, alfalfa, truck.....	<sup>*</sup> 2.0		0	0.80 per acre for each irrigation.....		1 72	2 70	1 72	4 42	0 86	2 21
Elkhorn Mutual Water Company.....	2,732	Alfalfa, 1,537; beans, 812; deciduous trees, 302; truck, 81.....	1.2	3.0	1 50	3.00 per acre-foot.....	3 00	3 60		5 10		4 25	
Feather River Water Company.....	236	Deciduous trees, 236.....		2.3	3 15	None.....	0	0	0 60	3 15	3 75	<sup>a</sup> 1 37	<sup>a</sup> 1 63
Garden Highway Mutual Water Company.....	1,306	Deciduous trees, 973; beans, 303; vines, 30.....		2.7	3 75	None.....	0	0	0 60	3 75	4 35	<sup>a</sup> 1 39	<sup>a</sup> 1 61
Hallwood Irrigation Company.....	5,400	Beans, orchard, vineyard and pasture, 4,550; rice, 850.....		6.6	1 50	None.....	0	0	0 60	1 50	2 10		
Loam Ridge Mutual Water Company.....	1,000	Deciduous trees, 730; citrus, 130; grain, 90; alfalfa, 50.....	1.6	1.8	0	0.15-0.20 per acre-inch.....	2 30	3 68	1 38	3 68	5 06	2 30	3 16
Natomas Central Mutual Water Company.....	2,650	Alfalfa, 1,046; rice, 656; truck, 607; beans, 272; deciduous trees, 69.....	1.5		0 50	3.00 per acre-foot.....	3 00	4 50		5 00		3 33	
Natomas Riverside Mutual Water Company.....	1,150	Alfalfa, 844; beans, 205; deciduous trees, 83; truck, 18.....	1.5	4.1	1 00	4.00 per acre-foot.....	4 00	6 00		7 00		4 67	
Orangevale Water Company.....		Deciduous trees, vines, olives, alfalfa.....		<sup>b</sup> 1.5	<sup>c</sup> 0 30	<sup>d</sup> 24.00 per miner's inch per year.....		<sup>b</sup> 6 00	1 20	<sup>c</sup> 6 20	<sup>c</sup> 7 40		
Plumas Mutual Water Company.....	1,243	Deciduous trees, 545; alfalfa and miscellaneous, 445; rice, 253.....			0	Actual cost on acreage basis.....		4 20	1 80	4 20	6 00		
Roberts Ditch Irrigation Company.....	800	Alfalfa, deciduous trees, corn and beans.....		3.0	0	2.25 per hour for flow of pump.....	2 15	6 45	0 60	6 45	7 05	<sup>a</sup> 2 15	<sup>a</sup> 2 35
Stanford Vina Ranch Irrigation Company.....	3,020	Field crops, 1,460; alfalfa, 520; deciduous trees, 500; cotton, 400; other, 140.....	5.0	5.4	1 00	None.....	0	0		1 00		0 20	
Sutter Mutual Water Company.....	31,973	Grain, 12,665; rice, 5,660; beets, 3,424; cotton, 2,130; deciduous trees, 1,703; vines, 1,300; beans, 1,039 asparagus, 938; pre-irrigation, 2,357; other, 757.....	<sup>e</sup> 1.9		0 75	0.75 per acre-foot.....	0 75	1 42	3 12	2 17	5 29	1 14	2 78
Swinford Tract Irrigation Company.....	140	Deciduous trees, 130; alfalfa, 10.....		2.2	4 50	1.00 per hour for flow of pump.....	1 21	2 67	3 00	7 17	10 17	<sup>a</sup> 3 26	<sup>a</sup> 4 62
Western Canal Company.....	9,650	Rice, 6,862; cotton, 1,565; beans, 245; miscellaneous, 978.....	1.7		0	1.00 per acre-foot; minimum, \$2.00 per acre.....	1 00	2 00	1 80	2 00	3 80	1 17	2 24
Orland Project, U. S. Bureau of Reclamation.....	13,479	Alfalfa, 4,703; deciduous trees, 3,425; field crops, 3,952; grain, 646; citrus, 331; vines, 256; olives, 161.....	2.8	4.1	1 70	<sup>f</sup> Excess water; \$0.10 and \$0.60 per acre-foot.....	<sup>f</sup> 0.10-0.60	0 05	2 19	1 75	3 94	0 62	1 41

<sup>\*</sup> Estimated.  
<sup>a</sup> Per acre-foot diverted (pumped).  
<sup>b</sup> Estimate based on gross area.  
<sup>c</sup> Includes \$0.10 per acre deposited in sinking fund and not included in annual cost of water.  
<sup>d</sup> One miner's inch equals one-fiftieth of a cubic foot per second.  
<sup>e</sup> Does not include grain for which average amount of water delivered was \$0.62 per acre  
<sup>f</sup> Charges for excess water: \$0.10 per acre-foot for natural flow water, and \$0.60 per acre-foot for stored water.





TABLE 27  
COST OF WATER TO IRRIGATORS FOR RICE, MUTUAL WATER COMPANIES AND PUBLIC UTILITY COMPANIES, NORTHERN AND CENTRAL CALIFORNIA,  
AVERAGES FOR YEARS 1925-1929, INCLUSIVE, AND YEAR 1929  
Compiled from data furnished by the individual mutual water companies

Compiled from data furnished by the individual mutual water companies															
Name of company	Rice area irrigated, acres		Approximate amount of water delivered, acre-feet per acre		Factors in annual cost of water							Average annual cost of water with interest on capital investment			
					Assessments, per acre		Water charges				Interest at 6 per cent on approximate capital investment, per acre	Per acre		Per acre-foot	
	Average, 1925-1929	1929	Per acre-foot				per acre for average amount used								
		Average, 1925-1929	1929	Average, 1925-1929	1929	Average, 1925-1929	1929	Average, 1925-1929	1929	Average, 1925-1929	1929		1925-1929	1929	1925-1929
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Mutual Water Companies															
Alicia Mutual Water Company.....	530	400			\$0 70	\$0 65			\$8 16	\$9 72	\$2 04	\$10 90	\$12 41		
Garden Highway Mutual Water Company.....	<sup>a</sup> 456	0			<sup>a</sup> 8 25				0	0	0 60	8 85			
Hallwood Irrigation Company.....	<sup>b</sup> 860	850			1 80	1 50	0	0	0	0	0 60	2 40	2 10		
Improvement Mutual Water Company.....	<sup>c</sup> 425	564	<sup>c</sup> 14.3	15	<sup>c</sup> 1 13	1 40	<sup>c</sup> \$0 95	\$1 10	<sup>c</sup> 13 60	16 50	2 70	17 43	20 60	\$1 22	\$1 37
Natomas Central Mutual Water Company.....	1,480	656			0 50	0 50			6 80	6 00		7 30	6 50		
Patterson Water Company.....	<sup>e</sup> 200	100	*10	*10	14 00	14 00	<sup>d</sup> 2 00	<sup>d</sup> 2 00	12 00	12 00	0 83	26 83	26 83	2 68	2 68
Plumas Mutual Water Company.....	<sup>e</sup> 275	253			0	0			<sup>e</sup> 8 40	8 40	1 80	10 20	10 20		
Poso Canal Company.....		14,297	*7	*7	<sup>e</sup> 1 62	1 50			<sup>f</sup> 1 25	<sup>f</sup> 1 25		<sup>f</sup> 2 87	<sup>f</sup> 2 75	<sup>f</sup> 0 41	<sup>f</sup> 0 39
Sutter Mutual Water Company.....	7,950	5,660	9.4	9.7	0 95	0 75	0 95	0 75	<sup>f</sup> 1 75	<sup>f</sup> 1 75		<sup>f</sup> 3 37	<sup>f</sup> 3 25	<sup>f</sup> 0 48	<sup>f</sup> 0 46
Western Canal Company.....	9,875	6,862	6.3	6.6	0	0	1 00	1 00	8 90	7 28	3 12	12 97	11 15	1 38	1 15
									6 30	6 60	1 80	8 10	8 40	1 29	1 27
Public Utility Companies															
San Joaquin and Kings River Canal and Irrigation Company.....		3,891	*7	*7	0	0			<sup>g</sup> 1 25	<sup>g</sup> 1 25	<sup>g</sup> 1 25	<sup>g</sup> 1 25	<sup>g</sup> 1 25	<sup>g</sup> 0 18	<sup>g</sup> 0 18
Sutter Butte Canal Company.....		16,355			0	0			<sup>h</sup> 1 75	<sup>h</sup> 1 75	<sup>h</sup> 1 75	<sup>h</sup> 1 75	<sup>h</sup> 1 75	<sup>h</sup> 0 25	<sup>h</sup> 0 25
									<sup>i</sup> 2 25	<sup>i</sup> 2 25	<sup>i</sup> 2 25	<sup>i</sup> 2 25	<sup>i</sup> 2 25	<sup>i</sup> 0 32	<sup>i</sup> 0 32
									<sup>j</sup> 8 50	8 50		8 50	8 50		

\*Estimated.  
<sup>a</sup> 1927 and 1928.  
<sup>b</sup> 1926-1929, inclusive.  
<sup>c</sup> 1927-1929, inclusive.  
<sup>d</sup> For water in excess of four acre-feet per acre.  
<sup>e</sup> 1928 and 1929.  
<sup>f</sup> Charge by San Joaquin and Kings River Canal and Irrigation Company: Fresno County, \$1.25; Merced County, \$1.75. Poso Canal Company obtains its water from the public utility company, pays the rates of that company and has been included with that company in Table 4 (1929 crops). See footnote <sup>a</sup> below.  
<sup>g</sup> Rate for all crops up to and including 1929: Fresno County, \$1.25; Merced County, \$1.75; Stanislaus County, \$2.25. New rate in effect 1930: rice, \$7.50 per acre for all counties; or a measured rate of \$1.15 per acre-foot.  
<sup>h</sup> Rate for 1926-1929 for gravity water. Charge for water pumped at booster plant, \$1.30 per acre additional. New rates in effect 1930; gravity water, \$9.00 per acre; pumped water, \$10.40 per acre.  
<sup>i</sup> Fresno County.  
<sup>j</sup> Merced County.  
<sup>k</sup> Stanislaus County.  
<sup>l</sup> In 1930.





TABLE 28  
COST OF WATER TO IRRIGATORS, IRRIGATION DISTRICTS, NORTHERN, CENTRAL AND SOUTHERN CALIFORNIA, 1929  
Compiled from data furnished by the individual irrigation districts

Name of district	Location	County or counties	Year organized	Gross area in district, acres	Estimated irrigable area, acres	Source of water supply	Character of water supply as reported by district for acreage irrigated in 1929	Unit to which water is delivered by district	Percentage of water pumped	Lift, feet	Total area irrigated, acres	Area irrigated, 1929 Crops, with acreages if available	Average amount of water diverted, acre-feet per acre	Average amount of water delivered, acre-feet per acre	Bonded debt per net acre, January 1, 1930	Total bonded debt, retired, per net acre	Usual district assessed valuation per acre, 1929-1930	Factors in annual cost of water				Deductions—average, past two years		Annual cost of water				Name of district			
																		Water tolls				Bond principal tax, per net acre	Improvement tax, per net acre	Per net acre for average amount delivered		Per acre-foot for average amount delivered					
																		Rate schedule		Per acre-foot	Per acre for average amount used			Excluding interest on retired bonds	Including interest on retired bonds	Excluding interest on retired bonds	Including interest on retired bonds				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)		
Northern California																															
Anderson-Cottonwood	Anderson	Shasta, Tehama	1914	32,000	28,064	Sacramento River	Ample	Farm	(b)	66	16,295	Alfalfa, 7,400; truck, 6,500; deciduous trees, 1,570; vines, 400; miscellaneous, 425	7.20		\$41.69	\$3.03	\$50.00	\$0.18	\$4.25	None		\$0.78	None	\$3.17	\$8.65				Northern California		
Big Springs	Montague	Siskiyou	1927	3,570	2,546	Big Springs	Ample	Farm	100	0	2,320	Truck, 1,830; deciduous trees, 1,415; alfalfa, 645; vines, 470; grain, 90; citrus, 82; miscellaneous, 2,460	2.26	1.85	None	11.92	10.00	0.72	None	\$4 per inch per year or \$2.50 April 1 to September 1	\$0.33	\$0.61	None	None	0.61	1.93	\$0.33	50.72	Big Springs		
Browns Valley	Browns Valley	Yuba	1888	40,000	11,740	North Fork Yuba River	Slightly deficient	Farm	0	0	6,992	Grain, pasture, alfalfa	2.04		None	67.34	None	150.00	0.40	2.60	None	None	None	None	None	None	None	None	Browns Valley		
Butte Valley	Butte Valley	Siskiyou	1920	2,446	17,500	Butte and Antelope Creeks	Deficient	Approximately 160 acres	0	0	5,500	Deciduous trees, 2,046; grain, 300; alfalfa, 100	2.04		None	67.34	None	150.00	0.39	2.60	None	None	None	None	None	None	None	None	Butte Valley		
Camp Far West	Camp Far West	Placer, Yuba	1924	3,038	2,538	Bear River and Reservoir	Ample	Farmers' laterals	150	150	1,950	Deciduous trees, 1,500; citrus, 250; vines, 200	2.14	2.14	32.98	6.52	80.00	0.39	2.60	None	None	None	None	None	None	None	None	None	Camp Far West		
Carmichael	Carmichael	Sacramento	1916	3,138	3,038	American River	Ample	Five acres	0	0	2,850	Deciduous trees, olives, vines, citrus	1.25	1.25	62.30	7.83	100.00	0.47	10.25	None	None	None	None	None	None	None	None	None	Carmichael		
Citrus Heights	Citrus Heights	Sacramento, Placer	1920	3,077	3,068	North Fork Ditch Company	Ample	Ten acres	0	0	1,092	Rice, 1,092	6.77		33.39	12.08	75.00	0.72	3.17	Rice, \$7, general crops, \$2 per acre			None	None	None	None	None	None	Citrus Heights		
Compton-Delevan	Compton-Delevan	Colusa	1920	6,777	3,068	Sacramento River	Ample	No set unit	0	0	1,500	Rice, 1,500	14.56		47.59	15.86	75.00	0.75	3.87	Rice, \$3; general crops, \$1.25 per acre			None	None	None	None	None	None	Compton-Delevan		
Cordua	Cordua	Yuba	1919	5,461	8,421	Deer Creek	Ample	High point on each 160 acres	0	0	4,900	Deciduous trees, 800; alfalfa, 500; truck, 300; miscellaneous, 450	2.15	2.15	13.63	56.03	None	125.00	0.09	6.00	None		None	None	None	None	None	None	Cordua		
Deer Creek	Deer Creek	Tehama	1906	1,663	5,421	Deer Creek	Ample	Farm	100	65	4,000	Deciduous trees, 1,197; truck, 1,185; alfalfa, 1,184; vines, 105; miscellaneous, 329	2.15	2.15	13.63	56.03	None	125.00	0.09	6.00	None		None	None	None	None	None	None	Deer Creek		
El Camino	El Camino	Tehama	1921	7,549	7,549	30 wells	Ample	Farm	100	0	6,000	Deciduous trees, 6,000	1.35	1.35	30.14	None	75.00	None	0.54	\$37.50 per miner's inch, steady flow, 120 days; \$42 per miner's inch cumulative flow 120 days			None	None	None	None	None	None	El Camino		
El Dorado	El Dorado	Placerville	1925	30,000	19,905	South Fork American River, Webber Creek	Slightly deficient	No set unit	0	0	2,553	Deciduous trees, 1,800; citrus, 688; vines, 50; truck, 15	1.81	1.81	36.47	10.59	90.00	0.63	4.27	\$5 per acre irrigated land; \$3 nonirrigated			None	None	None	None	None	None	El Dorado		
Fair Oaks	Fair Oaks	Sacramento	1917	3,900	3,400	North Fork Ditch Company	Ample	Five acres	0	0	2,553	Deciduous trees, 1,800; citrus, 688; vines, 50; truck, 15	1.81	1.81	36.47	10.59	90.00	0.63	4.27	\$5 per acre irrigated land; \$3 nonirrigated			None	None	None	None	None	None	Fair Oaks		
Glenn-Colusa	Glenn-Colusa	Glenn, Colusa	1920	121,592	118,592	Sacramento River	Ample	No set unit	100	7	40,500	Rice, 14,605; alfalfa, 8,223; truck, 1,588; citrus, 957; deciduous trees, 200; vines, 155; miscellaneous, 14,859	8.36		13.99	8.59	40.00	0.51	1.04	Rice, \$5; general crops, \$1 per acre			None	None	None	None	None	None	Glenn-Colusa		
Grenada	Grenada	Siskiyou	1921	4,948	3,510	Shasta River	Deficient	Farm	100	138	1,640	Alfalfa, 1,640	2.70		None	38.98	200.00	None	13.44	None		None	None	None	None	None	None	None	Grenada		
Hot Springs Valley	Hot Springs Valley	Modoc	1919	9,497	9,497	Pit River, Sage Reservoir	Ample	Charges for storage only	100	10	4,475	Grain, 5,118; alfalfa, 4,379	2.70		None	11.33	30.00	0.39	3.00	None		None	None	None	None	None	None	None	Hot Springs Valley		
Jacinto	Jacinto	Glenn	1917	11,554	10,300	Sacramento River	Ample	Approximately 40 acres	0	0	4,155	Alfalfa, 1,403; deciduous trees, 761; cotton, 328; grain, 302; miscellaneous, 1,361	3.47		17.28	5.83	60.00	0.35	2.85	\$1 per acre per season			None	None	None	None	None	None	Jacinto		
Montague	Montague	Siskiyou	1925	26,117	18,531	Shasta River, Lake Dwinell	Ample	Farms ready to receive water	0	0	4,200	Deciduous trees, 996; alfalfa, 774; field crops, 449; vines, 4; miscellaneous, 1,977			3.11	48.44	None	45.00	None	2.00	\$5 per acre-foot			None	None	None	None	None	Montague		
Nevada	Nevada	Nevada, Placer	1921	263,500	164,000	Yuba River, Bowman Reservoir	Ample	Farm	0	0	2,068	Citrus and olives, 2,068; vines, 30	1.66		1.66	47.49	None	100.00	None	2.00	\$0.10 per inch per season			None	None	None	None	None	None	Nevada	
Oroville-Wyandotte	Oroville-Wyandotte	Butte	1916	24,100	22,300	South Fork Feather River, Reservoir	Ample	Farm	0	0	3,300	Deciduous trees, 3,100; vines, 100; truck, 100	1.19		49.21	0.51	50.00	0.04	8.30	None			None	None	None	None	None	None	Oroville-Wyandotte		
Paradise	Paradise	Butte	1916	11,260	9,836	Little Butte Creek, Maglin Reservoir	Ample	Farm	0	0	1,840	Deciduous trees, 710; alfalfa, 600; grain, 160; vines, 10	1.75		1.73	23.12	None	60.00	None	2.08	\$2.40 per acre-foot			None	None	None	None	None	Paradise		
Potter Valley	Potter Valley	Glenn, Colusa	1910	13,658	12,290	South Fork Feather River (Lake Pillsbury)	Ample	Farm	100	22	4,171	Deciduous trees, 1,150; alfalfa, 715; grain, 116; cotton, 35; truck, 20; miscellaneous, 217	12.72		14.24	None	67.50	None	3.04	Rice, \$5; general crops, \$1.75 per acre			None	None	None	None	None	None	Potter Valley		
Princeton-Codora-Glenn	Princeton-Codora-Glenn	Glenn, Colusa	1918	22,805	21,000	Sacramento River	Ample	Usually each 160 acres	100	10	4,399	Rice, 4,325; alfalfa, 68; vines, 5	1.58		48.57	8.10	75.00	0.49	8.28	Rice, \$6.00; general crops, \$1.50 per acre			None	None	None	None	None	None	Princeton-Codora-Glenn		
Provident	Provident	Siskiyou	1917	5,123	4,000	Scott River	Slightly deficient	Farm	0	0	3,500	Alfalfa, 2,000; grain, 1,500	1.58		19.00	60.00	0.71	4.00	\$4 per acre			None	None	None	None	None	None	None	Provident		
Scott Valley	Scott Valley	Butte	1922	1,855	1,780	Cotton Creek, Lake Wileon	Ample	Farm	0	0	1,967	Rice, 151; alfalfa, 75; truck, 14; miscellaneous, 21	14.62		105.00	None	125.00	None	6.12	Rice, \$6; general crops, \$3 per acre			None	None	None	None	None	None	Scott Valley		
Table Mountain	Table Mountain	Butte	1922	3,110	2,940	Cotton Creek, Lake Wileon	Ample	To each tract as of time of district formation	0	0	1,967	Citrus, 642; deciduous trees, 600; vines, 145; truck and field crops, 50; grain, 20; alfalfa, 10; miscellaneous, 500	1.97		108.89	None	150.00	None	11.05	None			None	None	None	None	None	None	Table Mountain		
Thermalito	Thermalito	Butte	1922			Feather River, Lake Wileon	Ample	To each tract as of time of district formation	0	0	1,967	Citrus, 642; deciduous trees, 600; vines, 145; truck and field crops, 50; grain, 20; alfalfa, 10; miscellaneous, 500	1.97		108.89	None	150.00	None	11.05	None			None	None	None	None	None	None	Thermalito		
Central California																															
Alpaugh	Alpaugh	Tulare	1915	8,175	8,039	Wells	Ample	Ten acres	100	75	\$5,110	Cotton, 2,720; grain, 1,920; alfalfa, 400; vines, 70	1.45		32.74	2.46	50.00	0.15	5.80	\$1 per hour for 4 second-foot head			3.00	4.35	1.11	None	8.38	8.53	5.78	5.88	Alpaugh
Altus	Altus	Tulare, Fresno, Kings	1888	129,300	112,600	Kings River	Deficient	Farmers' laterals	0	0	100,000	Vines, 49,180; deciduous trees, 8,960; alfalfa, 7,500; cotton, 2,000; citrus, 930; field and truck, 880; miscellaneous, 30,550	0.86		2.41	1.96	60.00	0.12	1.80	None			None	None	0.33	0.26	0.01	1.03	None	Altus	
Basta-Carbons	Basta-Carbons	San Joaquin	1921	14,379	14,248	San Joaquin River	Ample	High point on each 160 acres	100	34	14,076	Field and truck, 5,636; alfalfa, 5,189; grain, 2,746; vines, 101; deciduous trees, 91; miscellaneous, 315	2.07	1.88	79.38	None	150.00	None	8.25	\$3 first, \$2.75 second, \$2.50 third, acre-foot			3.00	5.58	None	None	13.88	13.88	7.46	7.46	Basta-Carbons
Byron-Bethany	Byron-Bethany	Contra Costa, San Joaquin, Alameda	1919	17,200	12,544	Old River (San Joaquin)	Ample	High point on each 160 acres	100	44	10,000	Alfalfa, 7,000; grain, 2,500; deciduous trees, 300; field and truck, 200	1.60	0.99	48.39	3.43	130.00	0.21	5.42	\$3.50 per acre-foot			3.50	3.46	0.67	None	8.21	8.42	8.29	8.50	Byron-Bethany
Consolidated	Consolidated	Fresno, Tulare, Kings	1921	149,047	145,757	Kings River	Deficient	Farmers' laterals	66	64	129,000	Vines, deciduous trees, alfalfa, field crops	0.82		2.37	3.46	100.00	0.21	2.20	None			None	None	None	None	None	None	None	Consolidated	
Corcoran	Corcoran	Fresno	1919	51,606	51,000	Peoples Ditch Company, 7 wells	Very deficient	No set unit	0	0	18,000	Cotton, 14,000; grain, alfalfa	0.66		14.90	None	100.00	None	2.08	Kings River, \$1; People's Ditch, \$1.50; Pump, \$2.50 per acre per irrigation			1.23	0.82	None	0.04	2.84	2.86	4.33	4.33	Corcoran
East Contra Costa	East Contra Costa	Contra Costa	1926	20,200	19,780	Old River (San Joaquin)	Ample&gt																								





**TABLE 4**  
**COST OF WATER TO IRRIGATORS, PUBLIC UTILITY COMPANIES IN NORTHERN, CENTRAL AND SOUTHERN CALIFORNIA. AVERAGES FOR YEARS 1925-1929, INCLUSIVE, AND YEAR 1929, PARTICULARLY**  
 Compiled from data furnished by the individual public utility companies

Name of company	Address	County	Year organized	Source of water supply	Percentage of water pumped	Lift, feet	Area irrigated, 1929	Total acreage	Average amount of water delivered, acre-feet per acre		Water charges, 1929		Annual cost of water including interest on capital invested <sup>a</sup>				
									Crops, acreage if available	1925-1929	1929	Rate schedule	Per acre-foot	Per acre for average amount used		Per acre-foot for average amount used	
														Average, 1925-1929	1929	Average, 1925-1929	1929
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
Northern California																	
Clear Lake Water Company	Woodland	Yolo	1927	Cache Creek	0	0	Alfalfa, 7,404; miscellaneous, 2,061; deciduous trees and vines, 1,803 <sup>a</sup>	11,258	3.23	1.82	\$3.00 per cubic foot per second for 24 hours	\$1.50	\$4.84	\$2.73	\$1.50	\$1.50	
Cottonwood Irrigation and Mining Company	Hornbrook	Siskiyou	1904	Cottonwood and Grouse creeks	0	0	Alfalfa, 350; deciduous trees, 10; truck, 10	400	1.49	1.89	\$0.10 per miner's inch for 24 hours <sup>b</sup>	2.00	2.80	3.78	2.00	2.00	
Diamond Ridge Water Company	Diamond Springs	El Dorado	1916	Camp Creek, Park Creek, North Fork Cosumnes River	0	0	Pears, 500; miscellaneous, 100	600	( <sup>c</sup> )	( <sup>d</sup> )	Continuous flow, one miner's inch for 24 hours, \$0.30 <sup>e</sup>	6.00	7.00	6.00			
Happy Valley Water Company	Olinda	Shasta	1925	Eagle Creek, Anderson Creek, South Fork Clear Creek and North Fork Cottonwood Creek	0	0	Olives, 1,222; grapes, 100; berries, 80; deciduous, 50; truck, 25; field crops, 25	1,502	1.25	1.25	Cumulative flow, one miner's inch for 24 hours, \$0.35 <sup>f</sup>	7.00					
Natomas Water Company	Folsom	Sacramento	1912	South Fork American River	0	0	Deciduous trees and vines, citrus	1,980	4.28	11.21	Water not ordered in advance, \$0.45 <sup>g</sup>	9.00					
North Fork Ditch Company	Orangevale	Sacramento	1899	North Fork American River			Deciduous trees and vines, citrus										
Sutter-Butte Canal Company	Gridley	Butte, Sutter	1911	Feather River	( <sup>h</sup> )	( <sup>i</sup> )	Rice, 16,355; alfalfa, 2,044; deciduous trees, 5,600; grapes, 209; field crops, 2,053; grain, 1,205; pasture, 841; garden, 90	27,410	7.34	8.34	Rice—\$8.50 per acre gravity, \$9.80 pumped; general crops—\$3.25 per acre gravity, \$4.65 pumped <sup>j</sup>		6.67	6.47	6.61	6.78	
Central California																	
Buena Vista Canal, Incorporated	Bakersfield	Kern	1878	Kern River	0	0	Alfalfa, cotton, grain	3,968	12.12	2.57	\$0.38 per acre-foot <sup>k</sup>	0.38	0.81	0.98	0.38	0.38	
Central Canal Company	Bakersfield	Kern	1880	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees, vines <sup>l</sup>	3,002	3.17	1.58	\$0.38 per acre-foot <sup>k</sup>	0.38	1.20	0.40	0.38	0.38	
East Side Canal Company	Bakersfield	Kern	1892	Kern River	0	0	Cotton, alfalfa, deciduous trees, vines, field crops, truck	3,055	2.10	1.95	\$0.38 per acre-foot <sup>k</sup>	0.38	0.80	0.74	0.38	0.38	
Farmers Canal Company	Bakersfield	Kern	1880	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees, vines	2,800	1.67	1.30	\$0.38 per acre-foot <sup>k</sup>	0.38	0.68	0.45	0.38	0.38	
Stine Canal Company	Parkfield	Kern	1878	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees, vines	4,061	1.82	2.07	\$0.38 per acre-foot <sup>k</sup>	0.38	0.69	0.51	0.38	0.38	
Kern Land Canal Company	Bakersfield	Kern	1870	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees, vines	2,276	2.43	1.23	\$0.30 per acre-foot <sup>k</sup>	0.30	0.76	0.57	0.30	0.30	
Kern River Canal and Irrigation Company	Bakersfield	Kern	1892	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees, vines	1,968	1.27	1.32	\$0.38 per acre-foot <sup>k</sup>	0.38	0.48	0.50	0.38	0.38	
Pioneer Canal, Incorporated	Bakersfield	Kern	1878	Kern River	0	0	Alfalfa, cotton, grain, deciduous trees and vines, miscellaneous	6,312	1.00	1.00	\$0.50 to \$1.25 per acre-foot	1.00	1.00	1.00	1.00	1.00	
Madera Canal and Irrigation Company	Madera	Madera	1888	Fresno, Merced and San Joaquin rivers	0	0	Alfalfa, 58,544, cotton, 16,323; grain, 9,935; pasture, 9,174; rice, 3,891; truck, 800; deciduous trees, 409; total, 99,419	107,740	7.00		Pears, \$1.25 per acre per season <sup>m</sup>	1.25	1.25				
San Joaquin and Kings River Canal and Irrigation Company	Los Banos	Fresno, Merced, Stanislaus	1905	San Joaquin River	0	0	Alfalfa, 58,544, cotton, 16,323; grain, 9,935; pasture, 9,174; rice, 3,891; truck, 800; deciduous trees, 409; total, 99,419	107,740	7.00		Stanislaus, \$2.25 per acre per season <sup>n</sup>	2.25	2.25				
East Side Canal and Irrigation Company	Newman	Stanislaus	1887	San Joaquin River and Merced Irrigation District	0	0	Alfalfa, 4,000; beans, 1,800; rice, 350; cotton, 50	6,200	1.50	2.39	\$0.30 per miner's inch for 24 hours and \$0.15 per miner's inch for spilled water <sup>o</sup>	3.61	5.70	8.04	3.60	3.60	
Robert Estate Company and Emma Rose	Calaveras Camp	Calaveras	1892	Stanislaus River	0	0	Mainly alfalfa and deciduous trees	1,050	1.00	1.88	\$0.25 per miner's inch for 24 hours <sup>p</sup>	5.00	9.01	2.00	5.00	5.00	
Pacific Gas and Electric Company	Sonoma	Tuolumne	1905	Stanislaus River	0	0	Alfalfa, 183; deciduous trees, 102; beans, 50; grain, 6	336	1.00	1.00	\$2.00 per acre for two irrigations	2.00	2.00	2.00	2.00	2.00	
Monterey County Water Company	Soledad	Monterey	1901	Arroyo Seco River	0	0	Deciduous trees, 36	36	1.00	1.00	\$5.00 per acre for two irrigations (majority) <sup>q</sup>	5.00	5.00	5.00	5.00	5.00	
San Benito County Land and Water Company	Hollister	San Benito	1908	San Benito Creek	0	0											
Southern California																	
East Gardens Water Company	Gardena	Los Angeles	1902	Wells	100	80	Truck, 220; alfalfa, 20	240	2.20	2.14	\$1.25 per hour for all water used	8.40	15.48	17.08	8.40	8.40	
Farmers Irrigation Company	Santa Paula	Ventura	1915	Santa Clara River, wells	40-125	04	Citrus, 2,052; walnut, 1,636; beans, 652; apricots, 154; alfalfa, 107; truck, 107	5,688	1.67	2.08	\$0.20 per miner's inch for 24 hours (majority) <sup>r</sup>	15.04	8.42	10.48	8.04	8.04	
George R. Bliss	Caripinteria	San Bernardino	1915	Streams	0	0	Deciduous trees, 88; beans, 60; citrus, 59; avocados, 11	218	0.93	0.81	\$0.0325 per 100 cubic foot (majority) <sup>r</sup>	14.15	13.16	11.66	14.15	14.15	
Hogart Water Company	Hesperia	San Bernardino	1915	Streams	0	0	Miscellaneous, 40	40		0.80	\$5.00 per acre (minimum) <sup>s</sup>	5.00	5.00				
Piru Water Company	Piru	Ventura	1887	Piru Creek	0	0	Citrus, 322	322	2.33	1.70	\$0.006 per miner's inch per hour	8.40	6.17	8.03	5.63	5.63	
Lake Henet Water Company	Henet	Riverside	1887	Lake Henet, streams, artesian wells	0	0	Deciduous trees, 3,550; alfalfa, 3,300; citrus, 650	7,500	0.82	0.69	\$0.40 per miner's inch per 24 hours (majority) <sup>r</sup>	10.08	58.27	67.50	10.08	10.08	
Moorepark Farmers Water Company	Moorepark	Ventura	1919	Wells	100	45	Apricots, 290; walnuts, 273; beans, 10; tomatoes, 60	663		0.71	\$0.02 per miner's inch per hour (majority) <sup>r</sup>	12.10		8.59		12.11	
Santa Clara Water and Irrigation Company	Oxnard	Ventura	1871	Santa Clara River	100	105-241	Beans, 935; walnuts, 700; truck, 125; citrus, 40	1,760	1.38	1.08	\$0.20 per miner's inch per 24 hours (majority) <sup>r</sup>	6.16	5.44	5.04		5.04	
San Gabriel Valley Water Company	Alhambra	Los Angeles	1907	Wells	0	0	Deciduous trees, 172; citrus, 30	222	1.58	2.07	\$0.08 per 100 cubic feet (majority) <sup>r</sup>	34.85	50.86	72.14	32.10	34.85	
Sweetwater Water Corporation	National City	San Diego	1902	Wells	0	0	Citrus, miscellaneous, truck, deciduous trees	5,000	1.00	1.00	\$0.00 per 100 cubic feet (majority) <sup>r</sup>	26.13	22.45	26.14	22.45	26.14	
West Riverside Canal Company	Riverside	Riverside	1916	Santa Ana Basin, wells	0	0	Truck, 4,000; citrus, 2,500; alfalfa, 1,500	8,000	1.39	1.48	\$0.00 per miner's inch per year <sup>t</sup>	52.38	52.38	51.08	51.54	51.54	
Whittier Water Company	Whittier	Los Angeles	1907	Wells	100	50	Citrus, 1,600; deciduous trees, 400	2,000	1.43	1.08	\$0.04 per miner's inch per hour (majority) <sup>r</sup>	24.20	34.01	26.14	24.20	24.20	

<sup>a</sup> Estimated.  
<sup>b</sup> Approximate.  
<sup>c</sup> Formerly Yolo Water and Power Company, incorporated in 1911.  
<sup>d</sup> In years of normal or greater than normal rainfall there is usually a large planting of rice.  
<sup>e</sup> Water not available for irrigation in latter part of season.  
<sup>f</sup> About 5 per cent of the water diverted is boosted about ten feet.  
<sup>g</sup> Average where water is retailed to the farmers; the company wholesales much of the water.  
<sup>h</sup> Of this acreage 1,011 acres were double cropped.  
<sup>i</sup> Rates changed in 1930 to \$9 and \$10.40 for rice and \$3.95 and \$4.65 for general crops.  
<sup>j</sup> Acreage not known; crops listed in order of magnitude. Information secured by ditch tenders and areas may be slightly in excess of net area irrigated.  
<sup>k</sup> Average of four years, 1926-1929.  
<sup>l</sup> Not a complete supply; augments pumping.  
<sup>m</sup> Included under the San Joaquin and Kings River Canal and Irrigation Company (a mutual company). The rates for the latter company are included herein.  
<sup>n</sup> The Paso Canal Company pays the rates of the serving public utility company and in addition pays assessments as indicated in Tables 23, 24 and 27. Rates in effect in 1930 uniform for all counties. Rice, \$7.50 per acre per season; general crops, \$2.75; winter irrigation of grain and pasture, \$1.60; or measured rate of \$1.15 per acre-foot.  
<sup>o</sup> One miner's inch equals one-fiftieth of a cubic foot per second.  
<sup>p</sup> One miner's inch equals one-fourth of a cubic foot per second.  
<sup>q</sup> Company applied in 1930 for increase in rates; application pending.  
<sup>r</sup> Raised to \$0.04 per 100 cubic feet in 1930.  
<sup>s</sup> Extra water \$0.015 per hour, hour.  
<sup>t</sup> Formerly Piru Water Company.  
<sup>u</sup> The area served by this company is also served extensively by private pumping plants; therefore the data given for amount of water delivered and cost per acre are subnormal.  
<sup>v</sup> Latest incorporation in 1926.  
<sup>w</sup> The area served by this company, which is a carrier company owned by six mutual companies, has other sources of supply; therefore data on amount of water delivered and cost per acre are subnormal.  
<sup>x</sup> Fresno County.  
<sup>y</sup> Merced County.  
<sup>z</sup> Stanislaus County.  
<sup>aa</sup> Rice.  
<sup>ab</sup> General crops.  
<sup>ac</sup> Union Water Company water right purchased.  
<sup>ad</sup> Storage water \$3.00 per acre-foot in 1930.  
<sup>ae</sup> The records of deliveries are at the points where the water leaves the companies' canals and do not give actual deliveries to the land. Rate raised to \$0.55 per acre-foot in 1931 (interim rate).  
<sup>af</sup> See text pages 26 and 27.





TABLE 28—Continued  
COST OF WATER TO IRRIGATORS, IRRIGATION DISTRICTS, NORTHERN, CENTRAL AND SOUTHERN CALIFORNIA, 1929  
Compiled from data furnished by the individual irrigation districts

Name of district	Location	County or counties	Year organized	Gross area in district, acres	Estimated irrigable area, acres	Source of water supply	Character of water supply, as reported by district for acreage irrigated in 1929	Unit to which water is delivered by district	Percentage of water pumped	Lift, feet	Area irrigated, 1929		Average amount of water diverted, acre-feet per acre	Average amount of water delivered, acre-feet per acre	Bonded debt per net acre, January 1, 1930	Total bonded debt retired, per net acre	Usual district assessed valuation per acre, 1929-1930	Factors in annual cost of water				Deductions—average, past two years		Annual cost of water				Name of district	
											Total area irrigated, acres	Crops, with acreages if available						Interest on retired bonds per net acre at 6 per cent	Usual district tax per net acre for past two years	Water tolls		Bond principal tax, per net acre	Improvement tax, per net acre	Per net acre for average amount delivered		Per net acre for average amount delivered			
																				Rate schedule	Per acre-foot			Per acre for average amount used	Excluding interest on retired bonds	Including interest on retired bonds	Excluding interest on retired bonds		Including interest on retired bonds
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Southern California																													
Beaumont	Beaumont	Riverside	1910	4,141	3,181	Wells and creeks	Ample	Ten acres	15	140	2,000	Deciduous trees, 2,000		0.80	\$83.26	\$11.65	\$100.00	\$0.70	\$10.25	\$7 per acre per annum	\$8.22	\$4.59	\$1.87	\$1.76	\$12.11	\$13.31	\$16.35	\$17.27	Beaumont
Imperial	El Centro	Imperial	1911	605,000	515,000	Colorado River	Ample	Farm	0	0	424,145	Alfalfa, 245,778; field and truck, 94,189; grain, 46,191; cotton, 20,431; citrus, 10,323; vines, 3,496; deciduous trees, 554; miscellaneous, 3,186	6.62	3.85	29.32	1.75	100.00	0.10	8.40	\$0.25 per acre per day	0.05	0.55	None	None	48.58	48.58	116.45	116.45	Imperial
La Canada	La Canada	Los Angeles	1924	1,294	1,294	Canyons and wells	Ample	Five acres	32	0	800	Miscellaneous, 800	0.40	0.40	253.48	None	1,000.00	None	17.50	None	0.05	0.05	None	None	4.50	4.50	1.17	1.19	La Canada
Lakeside	Lakeside	San Diego	1924	320	258	San Diego River	Ample	Average four acres	100	10-40	50	Miscellaneous, 50	0.50	0.50	121.53	None	100.00	None	4.25	\$2 minimum and \$0.05 per 100 cubic feet	72.93	29.08	None	None	48.58	48.58	116.45	116.45	Lakeside
La Mesa, Lemon Grove and Spring Valley	La Mesa	San Diego	1912	18,000	17,500	San Diego River, Boulder Creek	Ample	Farm	41	300	3,831	Citrus, 2,127; field and truck, 756; deciduous trees, 100; miscellaneous, 648	0.87	152.40	0.74	350.00	0.04	9.10	None	13.07	None	None	None	9.51	39.31	35.25	35.25	La Mesa, Lemon Grove and Spring Valley	
Little Rock Creek	Little Rock	Los Angeles	1895	3,074	2,877	Little Rock Creek, reservoir	Deficient	Farm	0	0	2,000	Deciduous trees, 2,000	0.95	0.95	125.14	3.78	100.00	0.17	9.25	None	27.65	23.98	None	None	30.00	30.00	35.25	35.25	Little Rock Creek
Newport Heights	Costa Mesa	Orange	1918	1,560	1,303	3 wells	Ample	Five acres	100	84	4,230	Deciduous trees, 996; alfalfa, 774; field and truck, 419; miscellaneous, 1,061	1.94	1.94	106.45	None	800.00	None	10.80	\$0.20 per hour for 25 inch head; acre lots to \$2.00 per month, etc.	11.32	22.03	None	None	8.79	8.99	9.25	9.43	Newport Heights
Palmdale	Palmdale	Los Angeles	1918	4,750	4,698	Little Rock Creek, reservoir, wells	Ample	40 acres	59	220	1,038	Deciduous trees, 580; grain, 120; alfalfa, 68; vines, 20; miscellaneous, 220	1.19	1.19	125.00	None	600.00	None	12.00	Various	6.45	7.05	None	None	18.05	15.05	15.17	15.17	Palmdale
Palo Verde	Byrtle	Riverside, Imperial	1923	88,063	70,000	Colorado River	Ample	Farm	7	5	32,333	Cotton, 23,120; alfalfa, 4,843; field and truck, 3,083; grain, 1,287	6.34	6.53	60.66	9.33	90.00	None	8.63	None	1.60	1.60	None	None	8.63	8.63	9.55	9.55	Palo Verde
Ramona	Ramona	San Diego	1925	650	585	San Diego River, etc.	Ample	Farm	25-165	0	1,853	Grain, 1,000; citrus, 683; miscellaneous, 200	2.30	2.30	155.55	None	50.00	0.56	16.44	None	34.85	80.15	None	None	81.90	66.46	34.46	34.46	Ramona
San Diego	Escondido	San Diego	1922	3,900	3,700	Lake Hodges, Lake Henshaw	Ample	Farm	0	0	0	Field and truck, 40; alfalfa, 20	0.61	0.66	108.11	None	400.00	None	13.00	\$0.03 per 100 cubic feet	13.07	14.54	None	None	27.40	27.40	30.78	30.78	San Diego
Santa Fe	Rancho Santa Fe	San Diego	1911	502	462	Wells	Ample	Ten acres	100	100-220	827	Miscellaneous, 130	2.66	2.66	54.11	None	250.00	None	12.50	\$0.03 per 100 cubic feet; minimum monthly charge, \$1.	16.46	11.24	None	None	24.24	24.24	28.20	28.20	Santa Fe
San Ysidro	San Ysidro	San Diego	1911	502	462	Wells	Ample	Farm, subdivisions must pay for own lines	100	175	827	Field and truck, 430; citrus, 377; deciduous trees, 192; vines, 52; miscellaneous, 30	1.81	1.81	113.39	37.39	850.00	2.24	17.00	Graduates from \$0.125 to \$0.015 per 100 cubic feet	10.09	13.23	None	None	36.50	36.50	13.23	13.23	San Ysidro
South Montebello	Pasadena	Los Angeles	1922	970	910	Lake Henshaw	Ample	Ten acres	0	0	4,119	Citrus, 2,301; field and truck, 1,544; deciduous trees, 192; vines, 52; miscellaneous, 30	1.58	1.38	116.36	None	150.00	None	11.70	Graduates from \$0.04 to \$0.07 per 100 cubic feet	18.50	25.27	None	None	33.95	36.97	26.50	26.50	South Montebello
Vista	Vista	San Diego	1923	15,162	14,610	San Gabriel River	Ample	Farm	90	58	911	Citrus, 654; deciduous trees, 180; field and truck, 65; alfalfa, 6; miscellaneous, 6	1.78	1.78	None	None	1,000.00	None	10.00	\$1 per hour, 200 inches; \$0.30 per hour, 100 inches; day rate, night rate, one-half amount incl. river, 40-25 hour, light rate	2.77	4.03	None	None	14.93	14.93	8.39	8.39	Vista
Walnut	Riverside	Los Angeles	1893	911	911	San Gabriel River	Ample	Farm	90	58	911	Citrus, 654; deciduous trees, 180; field and truck, 65; alfalfa, 6; miscellaneous, 6	1.78	1.78	None	None	1,000.00	None	10.00	Average, \$0.015 per 100 cubic feet	2.77	4.03	None	None	14.93	14.93	8.39	8.39	Walnut
Los Angeles Municipal Improvement District No. 2	Los Angeles	Los Angeles	1916	11,010		Los Angeles Aqueduct	Ample	Farm					1.67	21.25	14.17	425.00	0.85	1.83	Average, \$0.018 per 100 cubic feet	2.77	4.03	None	None	14.93	14.93	8.39	8.39	Los Angeles Municipal Improvement District No. 2	
Los Angeles County Water Works District No. 3	Los Angeles	Los Angeles	1913	74,535		Los Angeles Aqueduct	Ample	Farm					0.90	2.10	19.40	425.00	0.85	2.27	Average, \$0.018 per 100 cubic feet	2.77	4.03	None	None	14.93	14.93	8.39	8.39	Los Angeles County Water Works District No. 3	
* The meeting place of the board of directors. * A small percentage of the water diverted is lost.																													
																													Los Angeles County Water Works District No. 3

a The meeting place of the board of directors.  
b A small percentage of the water diverted is lost.  
c A considerable acreage outside the district is also served with water purchased from the district.  
d For a detailed description of each district see State of California, Department of Public Works, Bulletin No. 21, "Irrigation Districts in California."  
e No bond interest payment in 1928.  
f Include some bonds of future maturity.  
g Some irrigation water derived from drainage wells.  
h Computed on a steady flow basis.  
i Some acreage double cropped, counted twice.





TABLE 36  
COST OF WATER FOR IRRIGATION IN CALIFORNIA  
Irrigation districts in northern, central and southern California, 1922  
Reprint of Table 8 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Factors in annual cost of water																									Annual cost of water									
Name of district	Address	County	Year organized	Area in district, acres	Estimated irrigable area, acres	Source of water supply	Percentage of water pumped	Lift, feet	Area irrigated										Average duty of water at delivery gate, acre-feet	Total authorized bonded debt per acre	Bonded debt per acre (January 1, 1922)	Total bonded debt retired per acre	Usual district assessed valuation per acre for 1922-23	Interest on retired bonds per acre at 6 per cent	Average district tax per acre for past two years	Water tolls			Deductions, average past two years		Per acre for average amount used		Per acre-foot for average amount used	
									Citrus trees, acres	Deciduous trees and vines, acres	Alfalfa, acres	Grain, acres	Rice, acres	Miscellaneous, acres	Total, acres	Kind of crops	Rate	Per acre-foot								Per acre for average amount used	Bond principal tax per acre	Permanent improvement tax per acre	Excluding interest on retired bonds	Including interest on retired bonds	Excluding interest on retired bonds	Including interest on retired bonds		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)		
Northern California																																		
Anderson-Cottonwood	Anderson	Shasta	1914	31,499	23,449	Sacramento River	9	12		847	2,279			x	3,283	4 00	\$39 95	\$37 15	\$0 00	\$560 00	\$0 00	\$5 10	None			\$0 00	\$0 00	\$5 10		\$1 28				
Carmichael	Sacramento	Sacramento	1916	3,100	3,000	American River	100	55		Maximum					1,800	1 50	29 03	28 45	0 58	80 00	0 03	3 50	\$2.50 per acre		\$2 50	0 29	0	0	7 71	\$7 74		\$5 16		
Citrus Heights	Sacramento	Sacramento	1910	3,028	3,000	North Fork Ditch Company	0		150	1,050					1,200	1 70	86 53	69 25	0	0 00	0	0 60	3.00 per acre		3 00	0	0	0	0	0 78				
Cordia	Fair Oaks	Sacramento	1919	5,512	5,412	Yuba River	0			x					2,200	2 40	48 44	46 63	0	120 00	0	3 40	None			6 00	0	0	9 40		3 92			
Fair Oaks	Yuba	Glenn	1917	4,000	3,200	North Fork Ditch Company	94	5 8	1,600	600	x				42,000	6 50	24 64	21 63	1 27	50 00	0 08	2 56	\$6.00 per acre		\$0 67	0 58	0	0	0 96		0 96	0 07		
Glenn-Colusa	Sacramento	Glenn, Colusa	1920	105,000	84,000	Sacramento River	0			x			34,500	x	3,400	*2 00	47 24	47 24	0	200 00	0 08	12 00	0.67 per acre-foot			0 58	0	0	3 48	1 13	1 16			
Glenn-Colusa	Willows	Glenn, Colusa													2,400	0 50	41 88	40 49	0	80 00	0	9 00	None (in 1922)			0	0	12 00		6 00				
Grenada	Grenada	Shasta	1891	18,277	13,213	Creeks	100	64		2,000					2,200	2 412	20 77	20 33	0 44	60 00	0 03	2 85	None			0	0	0	0	18 00				
Happy Valley	Glenn	Glenn	1916	11,460	11,200	Sacramento River	94	5 8	40	349	767	60			1,196	2 40	43 56	43 56	0	50 00	0	5 40	General		1 00	0 57	0	0	5 40		5 40	1 47		
Jacinto	Butte	Butte	1916	11,250	8,500	Little Butte Creek	0			1,510					1,090	2 40	1 00					1 33	Rice			8 00	0	0	9 33		1 50			
Paradise	Princeton	Glenn, Colusa	1916	13,861	11,780	Sacramento River	100			2,000	x		1,800			*2 00	12 63	12 63	0	67 50	0	1 33	General			2 73	0	0	4 08		2 04			
Princeton-Codora-Glenn	Glenn, Colusa	Glenn, Colusa				Sacramento River	70	5					1,410		1,410	9 00							Rice			3 37	0	0	3 37		0 37			
Reclamation District No. 108	Colusa	Colusa		58,000	50,700	Sacramento River																												
Central California																																		
Alpaugh	Alpaugh	Tulare	1915	8,068	8,068	21 wells	100	55		225	1,575	2,800			4,400	2 00	35 07	35 07	0	50 00	0	3 50	\$0.80 per hour (200 inch head)		2 42	4 84	0	0 53	7 81		3 91			
Alta	Dimula	Tulare, Fresno	1888	130,000	130,000	Kings River	100		900	64,100					100,000	*1 50	8 84	3 15	0 63	45 00	0 04	1 15	None			0 10	0 15	0 00		0 94		0 60		
Byron-Bethany	Byron	Contra Costa	1919	17,000	11,333	Old River (San Joaquin)	100	45 to 155		Maximum	x	x			6,000	1 57	31 25	31 25	0	130 00	0	5 35	\$2.50 per acre-foot		2 50	3 33	0	0	9 78		0 25	0 63		
Consolidated	Selma	Fresno, Tulare, Kings	1921	150,000	150,000	Kings River	0				x				*125,000	2 10	5 47	5 47	0	100 00	0	*0 36	0.75 per acre-foot			0 75	0	0	1 11		0 53			
Corcoran	Corcoran	Fresno	1919	51,570		Kings River	0				x				16,000	3 26	14 74	14 74	0	100 00	0	1 40	0.50 and \$1.00 per irrigation			2 00	0	0	3 40		1 04			
Fresno	Fresno	Fresno	1920	243,000	243,000	Kings River	0			*194,000	x				215,000	1 84	8 23	8 23	0	100 00	0	1 27	None			6 15	0	0	6 15		3 08			
James	San Joaquin	Fresno	1920	20,500	20,000	Kings River and wells	30	35		x					10,000	2 00	37 73	37 73	0	150 00	0	4 15	\$2.00 per acre (gravity)			2 00	0	0	2 00		3 83			
James	San Joaquin	Fresno	1920	20,500	20,000	Kings River and wells	30	35		x					10,000	2 00	37 73	37 73	0	150 00	0	4 15	\$2.50 per acre (pumped)			3 50	0	0	7 65		3 83			
Lindsay	Tulare	Fresno	1915	15,289	14,500	39 wells	100	300	Maximum	x					8,870	1 51	107 02	107 02	0	150 00	0	11 10	\$3.00 per acre (gravity)			9 00	13 59	0	24 00		1 35			
Lindsay-Strathmore	Merced	Merced	1919	190,000	165,000	Merced River	0			x	x	21,495	5,985		*65,000	*2 50	63 15	25 89	0	75 00	0	1 55	None			0 36	1 23	3 03		3 68		1 47		
Modesto	Stanislaus	Stanislaus	1887	81,183	75,000	Tuolumne River	0			17,273	x				12,800	2 50	51 08	51 11	0 87	80 00	0 05	5 22	None			0 36	1 23	3 03		3 68		1 47		
Modesto	Stanislaus	Stanislaus	1909	73,246	63,000	Stanislaus River	0			17,273	x				12,800	2 50	51 08	51 11	0 87	80 00	0 05	5 22	None			0 36	1 23	3 03		3 68		1 47		
Oakdale	Oakdale	Stanislaus	1909	73,246	63,000	Stanislaus River	0			17,273	x				12,800	2 50	51 08	51 11	0 87	80 00	0 05	5 22	None			0 36	1 23	3 03		3 68		1 47		
South San Joaquin	Tulare	Tulare	1915	10,080	10,080	Wells and streams	20	12		x		7,900	3,000		105,000	1 60	37 30	36 64	0 66	65 00	0 04	3 45	None			0 33	0 05	2 23		2 08		1 31		
Terra Bella	Tranquillity	Fresno	1918	10,750	10,350	Kings and San Joaquin rivers	20	12		x		7,900	3,000		105,000	1 60	37 30	36 64	0 66	65 00	0 04	3 45	None			0 33	0 05	2 23		2 08		1 31		
Tranquillity	Turlock	Stanislaus, Merced	1887	181,490	165,000	Tuolumne River	0			1,361	x		200		3,108	3 20	49 45	49 38	0	100 00	0	7 50	None			0	0 15	7 35		3 68				
Waterford	Waterford	Stanislaus	1914	13,577	10,747	Tuolumne River	0			1,361	x				3,108	3 20	49 45	49 38	0	100 00	0	7 50	None			0	0 15	7 35		3 68				
West Side	Tracy	San Joaquin	1915	11,765		San Joaquin River	100	83			3,823	4,360			10,671	2 00	46 19	46 19	0	100 00	0	7 50	None			0	0 15	7 35		3 68				
Southern California																																		
Beaumont	Beaumont	Riverside	1919	3,175	2,900	Wells and creeks	50	50 to 100		2,038					2,038	84	72 40	72 40	0	80 00	0	7 20	\$7.00 per acre			7 00	0	0	14 20		22 10			
Imperial	Imperial	Imperial	1911	602,840	515,000	Colorado River	0			x					413,400	3 00	26 50	23 18	0	100 00	0	1 80	\$1.00 per acre-foot (\$3.17)		1 00	3 00	0	0	7 97		2 66			
Little Rock Creek	Little Rock	Los Angeles	1892	3,073	3,050	Little Rock Creek	100			1,750					1,750	1 00	100 22	100 22	0	100 00	0	6 88	None			0	0	0	0	6 88		4 30		
Newport Mesa	Costa Mesa	Orange	1918	670		Wells	100	140		100	10				150	*2 00	74 62	74 62	0	400 00	0	11 70	Alfalfa			5 00	0	0	16 70		8 35			
Newport Mesa	Costa Mesa	Orange	1918	670		Wells	100	140		100	10				150	*2 00	74 62	74 62	0	400 00	0	11 70	Orchard			4 50	0	0	16 20		10 80			
Palmdale	Palmdale	Los Angeles	1916	4,750	4,650	Little Rock Creek	0			500					500	1 33	93 56	93 56	0	100 00	0	4 04	None			0	0	0	0	21 00		8 90		
San Ysidro	San Ysidro	San Diego	1912	492		Wells	100	75 to 168		x					130	2 36	50 82	50 82	17 08	250 00	0 42	*2 95	All (average)				12 00	0	0	9 98		7 68		
Los Angeles Municipal Improvement District No. 2	Los Angeles	Los Angeles	1912	11,610		Wells	100			1 30					130	1 30	35 42	35 44		250 00	0 42	*2 95	Deadwood			6 10	7 93	*1 32	0	0 56	9 98		8 48	
Los Angeles County Water Works District No. 3	Los Angeles	Los Angeles	1914	74,535		Los Angeles aqueduct										*1 00	0 14	0 14		300 00	0 42	*2 95	Citrus			6 10	6 10	*2 64	0	15 47	15 89	7 74		
																*1 00	0 14	0 14		300 00	0 42	*2 95	Alfalfa			6 10	18 30	*1 32	0	19 93	20 35	6 64		
																*1 00	0 14	0 14		300 00	0 42	*2 95	Alfalfa			6 10	7 93	*1 32	0	9 88	10 15	7 81		
																*1 00	0 14	0 14		300 00	0 42	*2 95	Alfalfa			6 10	12 20	*1 32	0	17 07	17 24	8 54		
																*1 00	0 14	0 14		300 00	0 42	*2 95	Alfalfa			6 10	18 30	*1 32	0	20 25	20 52	6 75		





**COST OF WATER FOR IRRIGATION IN CALIFORNIA**

Public utilities in northern, central and southern California, 1922  
Reprint of Table 1 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Name of company	Address	County	Year organized	Source of water supply	Per-centage of water pumped	Lift, feet	Area irrigated							Average duty of water per acre at delivery gate, acre-feet	Factors in annual cost of water			Annual cost of water including interest on capital invested				
							Citrus trees, acres	Deciduous trees and vines, acres	Alfalfa, acres	Grain, acres	Rice, acres	Miscel-laneous, acres	Total, acres		Water charges			Per acre for first acre-foot	Per acre for average amount used	Per acre for first acre-foot	Per acre for average amount used	Per acre for average amount used
															Rate	Per acre-foot	Per acre for average amount used					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)		
Northern California																						
Conehead Water Company	Los Molinos	Tehama	1907	Mill and Antelope Creeks	0	0		x	x				x	10,000	3.30	\$3 50 per acre (2-5 1/2 miner's inches per month)		\$3 50	\$2 00	\$3 50		
Cottonwood Irrigation and Mining Company	Hornbrook	Siskiyou	1904	Cottonwood Creek	0	0							500	1 60	0 10 per miner's inch per 24 hours	\$2 02	2 33	2 02	3 23	2 02		
El Dorado Water Corporation	Placerville	El Dorado	1910	American River, Webber Creek	0	0		4,800	x				200	5,000	1 14	30 00 per miner's inch per season		6 00	6 00	5 26		
Eschebor Water and Power Company	Smartsville	Yuba and Nevada		Yuba River and Deer Creek	0	0							2,700	1 23	0 25 per miner's inch per 24 hours	5 04	6 20	5 04	6 20			
Natoma Water Company	Sacramento	Sacramento and El Dorado		American River	0	0	-300	1,383					1,683	3 40	5 00 per acre		5 00	7 00	7 00	4 12		
North Fork Ditch Company	Placer	Placer	1899	American River	0	0							1,900	1 70	35 00 per miner's inch per year		7 00	8 18	8 18	6 01		
Pacific Gas and Electric Company	Auburn	Placer	1905	South Yuba River	0	0		26,400					26,400	1 35	45 00 per miner's inch per year		8 15	8 15	8 15	6 01		
Pacific Gas and Electric Company	Nevada City	Nevada	1905	South Yuba River	0	0		350					350	2 37	0 10 per miner's inch per 24 hours	3 23	7 66	3 23	7 66	3 23		
Pacific Gas and Electric Company	Butte	Butte	1905	Feather River	0	0							1,500	2 75	0 10 per miner's inch per 24 hours	5 55	5 55	5 55	5 55	5 55		
Palermo Land and Water Company	Palermo	Butte		Feather River	0	0							1,800	*2 00	40 00 per miner's inch per season	12 00	12 00	12 00	6 00	6 00		
South Feather Land and Water Company	Oroville	Butte and Yuba	1908	Lost Creek	0	0							2,060	2 50	2 30 per acre for most crops	2 30	2 30	2 30	2 30	1 40		
Sutter-Butte Canal Company	Gridley	Butte and Sutter	1912	Feather River	5	27								56,778	2 50	7 80 per acre for rice year to year	1 51	1 51	1 51	1 51	1 51	
								2,104	9,333	23	9,419	2,085	23,464	*2 00	3 00 per cubic foot per 24 hours—alfalfa	1 51	3 02	1 51	3 02	1 51		
														5 95	3 00 per cubic foot per 24 hours—rice	1 51	8 98	1 51	8 98	1 51		
Yolo Water and Power Company	Woodland	Yolo	1911	Cache Creek	0	0																
Central California																						
Consolidated Canal Company	Fresno	Fresno	1901	Kings River	0	0		x	x				x	100,400	2 10	0 75 per acre + 0.36 Consolidated Irrigation District tax		1 11	1 11	1 11	0 53	
Eastside Canal and Irrigation Company	Newman	Merced	1887	San Joaquin River	0	0		x	x				x	6,500	*2 00	2 34 per acre (average)		2 34	2 34	1 17	1 17	
Empire Water Company	Lemoore	Kings	1906	Kings River	0	0		x	x				x	*10,000	*2 00	1 00 per acre	1 00	1 00	1 00	0 50	0 50	
Foothill Ditch Company	Kern	Kern		Kern River	0	0				Field crops				1,800	*2 00	0 11 per miner's inch per 24 hours	2 82	5 64	2 82	5 64	2 82	
Kern County Canal and Water Company	Bakersfield	Kern		Kern River	0	0								*2,400	3 82	1 50 per acre	1 50	1 50	1 50	0 39	0 39	
Anderson Canal Company	Bakersfield	Kern	1878	Kern River	0	0		125	3,281	1,064		3,409	8,779	1 47	0 75 per cubic foot per second—24 hours	0 38	0 56	0 38	0 56	0 38		
Buena Vista Canal Company	Bakersfield	Kern	1878	Kern River	0	0		856	13,115	5,278		3,747	23,096	2 37	0 75 per cubic foot per second—24 hours	0 38	0 96	0 38	0 96	0 38		
Central Canal Company (Calloway)	Bakersfield	Kern	1891	Kern River	0	0		708	6,760	2,467		3,680	10,820	*2 00	0 50 per acre	1 50	1 50	1 50	0 69	0 69		
East Side Canal Company	Bakersfield	Kern	1892	Kern River	0	0		30	1,340	630		803	3,740	1 06	0 75 per cubic foot per second—24 hours	0 38	0 89	0 38	1 16	0 38		
Farmer Canal Company	Bakersfield	Kern	1890	Kern River	0	0							800	*3 00	0 75 per cubic foot per second—24 hours	0 38	1 14	0 38	1 14	0 38		
Gates Canal Company	Bakersfield	Kern	1879	Kern River	0	0							*850	1 50	0 75 per cubic foot per second—24 hours	0 38	1 50	0 38	1 50	0 38		
James Canal Company	Bakersfield	Kern	1878	Kern River	0	0							35,015	1 59	0 75 per cubic foot per second for 24 hours	0 38	0 76	0 38	0 76	0 38		
Kern Island Canal Company	Bakersfield	Kern	1892	Kern River	0	0		550	3,720	1,324		311	5,995	5 00	0 60 per cubic foot per second for 24 hours	0 30	1 52	0 30	1 52	0 30		
Kern River Canal and Irrigation Company	Bakersfield	Kern	1892	Kern River	0	0		335	1,445	404			2,384	6 32	0 75 per cubic foot per second for 24 hours	0 38	1 48	0 38	1 48	0 38		
Lerdo Canal Company	Bakersfield	Kern	1878	Kern River	0	0		10	2,350	1,235		5,140	8,305	2 70	0 75 per cubic foot per second for 24 hours	0 38	1 03	0 38	1 03	0 38		
Pioneer Canal Company	Bakersfield	Kern	1878	Kern River	0	0							*1,000	*3 00	1 50 per acre	1 50	1 50	1 50	0 50	0 50		
Pinkster Canal Company	Bakersfield	Kern	1878	Kern River	0	0		90	3,700	1,641		669	6,100	3 25	0 75 per cubic foot per second for 24 hours	0 38	1 24	0 38	1 24	0 38		
State Canal Company	Bakersfield	Kern	1878	Kern River	0	0							1,283	*1 00	1 00 per acre	1 00	1 00	1 00	1 00	1 00		
King County Canal Company	Los Angeles	Tulare and Kings		Floodwater Tule River	0	0							12,302	1 07	0 50 to 1 25 per acre-foot (\$1 00 average)	1 00	1 07	1 00	0 67	1 00		
Madera Canal and Irrigation Company	Madera	Madera	1905	Fresno and Merced Rivers	0	0		-4,900	*6,100				2,100	1 50	1 50 per irrigation (2 irrigations)	3 00		3 00	2 00	2 00		
Monterey County Water Company	Seaside	Monterey	1888	Arroyo Seco River	0	0			1,200			900	2,200	1 25	0 21 per miner's inch per 24 hours	4 24	5 47	4 24	5 47	4 24		
Pacific Gas and Electric Company	San Jose	San Jose	1905	Stanslaus River	0	0		2,200					1,900	1 50	5 00 per acre for 2 irrigations		5 00		5 00	3 33		
San Benito County Water Company	Hollister	San Benito	1905	Stanslaus River	0	0		1,000					79,877	*2 20	1 75 per acre in Merced County	1 75	1 75	1 75	1 75	0 80		
San Joaquin and Kings River Canal and Irrigation Company	Los Banos	Merced	1905	San Joaquin and Kings rivers	0	0								*2 20	1 25 per acre in Fresno County	1 25	1 25	1 25	0 57	0 57		
San Joaquin and Kings River Canal and Irrigation Company	Los Banos	Fresno	1905	San Joaquin and Kings rivers	0	0								*2 20	2 25 per acre in Stanislaus County	2 25		2 25	1 02	1 02		
San Joaquin and Kings River Canal and Irrigation Company	Los Banos	Stanislaus	1905	San Joaquin and Kings rivers	0	0																
Southern California																						
Appleton Land, Water and Power Company	Hesperia	San Bernardino	1911	Deep Creek	0	0		90	120					210	*1 50	0 015 per miner's inch per hour	9 08	13 62	9 08	13 62	9 08	
Bell Water Company	Bell	Los Angeles	1902	Wells	100			x	x				x	1,331	1 31	2 00 per 100 cubic feet (average)	12 10	15 86	12 10	15 86	12 10	
California Michigan Land and Water Company	Placerville	San Diego	1903	Wells	100			x	x				x	*700	*1 00	0 04 and 0 20 per 100 cubic feet	20 62	20 62	20 62	20 62	20 62	
Cuyamaca Water Company	San Diego	San Diego		Boulder and San Diego rivers	0	0		x	x				4,000	*1 00	0 06 per 100 cubic feet (average)	25 14	25 14	25 14	25 14	25 14		
Farmers Ditch Company	Santa Paula	Ventura	1917	Santa Clara River	0	0		x	x				x	4,200	1 52	0 10 per miner's inch per 24 hours (majority)	5 04	7 66	5 04	7 66	5 04	
Lake Hemet Water Company	Hemet	Riverside	1887	Lake Hemet	0	0		x	x				x	7,000	1 00	0 40 per miner's inch per 24 hours	10 10	10 10	10 10	10 10	10 10	
San Gabriel Valley Water Company	Los Angeles	Los Angeles	1908	Wells	100		200	x	x				x	*700	1 50	0 50 per 1,000 cubic feet	21 78	32 67	21 78	32 67	21 78	
Santa Clara Water and Irrigation Company	Saticoy	Ventura	1871	Santa Clara River	0	0		x	x				x	2,550	1 50	0 20 per miner's inch per 24 hours (beans and orchard)	5 04	7 56	5 04	7 56	5 04	
Sweetwater Water Company	National City	San Diego	1902	Sweetwater Reservoir	0	0	2,313	299	236				1,552	4,400	*3 00	0 04 to 0 10 per miner's inch per 24 hours (alfalfa)	5 54	5 54	5 54	8 85	8 85	
														1 00	0 05 per 100 cubic feet	21 78	21 78	21 78	21 78	21 78		

\* Estimated.

† Rate for one-fifth miner's inch per month.

‡ One miner's inch to 5 acres, basis.

§ One miner's inch to 5.5 acres, basis.

¶ Contract company.

‡ Taken over by irrigation district.

• Forty miner's inches=1 second-foot.

• Fifty miner's inches=1 second-foot.

• Forty-six miner's inches=1 second-foot.

\* Acreage unknown





**TABLE 37**  
**COST OF WATER FOR IRRIGATION IN CALIFORNIA**  
 Mutual water companies in northern and central California, 1922  
 Reprint of Table 17 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Name of company	Location	Year organized	Source of water supply	Lift, feet	Percentage of water pumped	Area irrigated								Average duty of water per acre at delivery gate, acre-foot	Capital stock				Factors in annual cost of water							Annual cost of water					
						Citrus trees, acres	Deciduous trees and vines, acres	Alfalfa, acres	Grain, acres	Rice, acres	Miscellaneous, acres	Total acres	Number of shares of stock issued		Par value of stock, per share	Market value of stock, per share	Average number of shares, per acre	Value of stock, per acre	Interest on value of capital stock, per acre at 6 per cent	Average annual assessment, per acre	Water rate		Water charge per acre, for average amount used	Amount per acre deposited in sinking fund or charged to capital stock	Per acre for first acre-foot		Per acre, for average amount used		Per acre-foot, for average amount used		
																					Schedule	Per acre-foot			Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	
Northern California																															
Butte-Glenn Mutual Water Company.....	Dodge Island	1920	Western Canal Company.....	8	100		12	3			180		195	5.60	2,174	\$7 00		1 000	\$7 00	\$0 42	\$0 25	\$13.00 per acre, rice.....		\$13 00	\$0 00	\$13 25	\$13 67	\$2 37	\$2 44		
Butte-Glenn Mutual Water Company.....	Dodge Island												1 06						0 42	0 25	3.50 per acre, general.....		3 80	0 00	4 05	4 47	3 82	4 22			
Durham State Land Settlement.....	Durham		Butte Creek.....	0	0		300	1,200			1,800	3,200	1 25						3 00	0 10	1.00 per acre-foot.....	\$1 00	1 25	0 00	1 10	4 10	1 35	4 25	1 08	3 48	
Elkhorn Mutual Water Company.....	Sacramento	1918	Sacramento River.....	24	100		110	352		0	1,607	2,069	1 05	6,000	10 00		1 000	43 00	2 70	1 00	3.00 per acre-foot.....	3 00	3 15	0 00	4 00	6 70	4 15	6 85	3 95	6 52	
Halwood Irrigation Company.....	Marysville	1910	Yuba River.....	0	0								3 00	0 17		\$23 00	1 000	1 38	1 50	None.....			0 00	1 50	2 88	1 50	2 88	0 50	0 06		
Natomas Central Mutual Water Company.....	Sacramento	1921	Sacramento River.....	24	100		99	357			385	821	0 86	19,580	10 00		1 000	32 00	1 92	0 50	4.00 per acre-foot.....	4 00	3 44	0 00	4 50	6 42	3 94	5 86	4 58	8 21	
Natomas Riverside Mutual Water Company.....	Sacramento	1920	Sacramento River.....	24	100		111	537			735		1 00	3,547	10 00		1 000	47 00	1 00	2 82	1 00	4.00 per acre-foot.....	4 00	3 44	0 00	5 00	7 82	5 00	7 82	5 00	7 82
Orangevale Water Company.....	Orangevale		Northfork Ditch Company.....	0	0						2,200		1 92						1 50	0 50	24.00 per miner's inch per season.....	4 80	8 00	0 00	5 30	6 50	5 30	6 50	2 76	3 39	
Orland Project, United States Reclamation Service.....	Orland	1916	Stony Creek.....	0	0	170	3,192	6,885		664	4,178	15,119	2 34				1 000	0 00	0 00	3 39	1.75 per acre; 3 acre-feet.....	1 84	1 75	1 75	1 84	1 84	0 55	0 55			
Western Canal Company.....	Oroville	1914	Lake Almanor.....	0	0						13,034		5 94	28,000	1 00		1 000	1 00	0 06	0 00	6.00 per acre, rice.....	6 00	0 00	0 00	6 00	6 06	6 00	6 06	1 01	1 02	
Western Canal Company.....	Oroville												1 06						0 06	0 00	2.00 per acre, general.....	2 00	0 00	2 00	2 06	2 00	2 06	1 89	1 94		
Central California																															
Carter Water Company.....	Tehachapi	1922	Wells.....	70	100		140					140	0 43	140					50 00	0 00	\$0.32 per day-inch.....	8 07	3 47	0 00	8 07	11 07	3 47	6 47	8 07	15 05	
Consolidated Peoples Water Ditch.....	Visalia	1874	Kaweah River.....	0	0	4,400	4,100				6,500	15,000	35 00	67	100 00	1,500 00	1-100	9 38	0 55	0 68	None.....			0 00	0 68	1 24	0 68	1 24	0 23	0 41	
Delhi State Land Settlement.....	Delhi	1920	Turlock Irrigation District.....	30	50		700	1,300			250	4 00	2 150						1 75		(District tax \$2 15)			0 00	3 91		3 91		0 98		
Evans Ditch Company.....	Visalia	1854	Kaweah River.....	0	0							800	12 00	682	100 00	15 00	1 000	15 00	0 00	3 50	None.....			0 00	3 50	4 40	3 50	4 40	1 75	2 20	
First Edison Well Company.....	Edison	1909	Wells.....	120	100		141					385	3 00	385	50 00	1 000	50 00	3 00	4 95	15.00 per 1,440 hour-inches.....	5 04	15 12	0 00	9 99	20 07	9 99	20 07	6 69	7 69		
Jennings Ditch Water Company.....	Visalia		St. John's River.....	0	0	255	100				230	630	13 20	84	40 00	60 00	0 100	5 00	0 00	0 00			0 00	2 98	3 28	2 98	3 28	0 92	1 03		
Lakeview Ditch.....	Hanford	1873	Kaweah River.....	0	0							19,800	12 50	20,167	1 00	5 00	1 000	6 00	0 30	0 79	None.....			0 00	0 79	1 09	0 79	1 09	0 32	0 44	
Last Chance Water Ditch Company.....	Hanford	1873	Kings River.....	0	0							30,000	1 68	45	1,000 00	1,800 00	1-640	2 81	0 17	0 83	None.....			0 17	0 66	0 83	0 66	0 83	0 39	0 49	
Blowers Side Ditch Company.....	Hanford	1911	Last Chance Ditch.....	0	0							530	1 68					12 81	0 17	0 96	None.....			0 17	0 79	0 96	0 79	0 96	0 47	0 57	
Independent Ditch Company.....	Hanford	1883	Last Chance Ditch.....	0	0							800	1 68					14 37	0 26	0 96	None.....			0 17	0 79	1 05	0 79	1 05	0 47	0 53	
Lemoore Canal and Irrigation Company.....	Lemoore	1902	Kings River.....	0	0	6,160	24,800		7,900		13,440	52,300	2 10	53	2,000 00	4,800 00	1 640	7 30	0 45	0 63	None.....			0 00	0 63	1 08	0 63	1 08	0 30	0 51	
Lerdo Mutual Water Company, No. 9.....	Bakersfield	1920	Wells.....	100	100		394					394	3 00	394	100 00	65 00	1 000	35 00	0 00	0 00	10.00 per acre.....	10 00		0 00	10 00	12 10	10 00	12 10	3 33	4 03	
Modoc Ditch Company.....	Hanford	1891	St. John's River.....	0	0			2,000			1,518	3,660	12 70	100	100 00	400 00	0 025	10 00	0 60	0 80	None.....			0 00	0 80	1 40	0 80	1 40	0 30	0 52	
Patterson Water Company.....	Patterson	1880	San Joaquin River.....	60	100	1,800	13,000				14,500		1 57	14,500	10 00		1 000	10 00	0 60	0 00	7.00 per acre.....	7 00		0 00	7 00	7 60	7 00	7 60	4 46	4 84	
Peoples Ditch Company.....	Hanford	1873	Kings River.....	0	0							50,000	2 30	534	1,000 00	4,400 00	1-640	6 87	0 41	0 71	None.....			0 20	0 51	0 92	0 51	0 92	0 22	0 40	
New Deal Ditch Company.....	Hanford	1885	Peoples Ditch.....	0	0							1,800	2 30	725	100 00			1-160	7 50	0 45	+0 82			0 17	0 79	0 83	0 79	0 83	0 27	0 47	
Riverside Ditch.....	Hanford	1894	Peoples Ditch.....	0	0							7,300	2 30	92	100 00			100 00	0 49	+1 03	None.....			0 20	0 83	1 32	0 83	1 32	0 36	0 57	
Pioneer Water Company.....	Porterville	1888	Tule River and wells.....	75	12					(Beams)	3,000	1 117	3,660	100 00	15 00	1 200	18 00	1 08	0 24	0 146 per day-inch.....		2 95	0 00	3 19	4 27	3 09	4 27	3 15	4 40		
Salinas Land Company.....	Kings City	1916	Wells.....	168-269		40					2,800		1 30	276	50 00		1 000	50 00	0 30	0 00	10.45 per acre.....	10 45		0 00	10 45	12 61	10 45	12 61	8 74	10 32	
Second Edison Well Company.....	Edison	1909	Wells.....	108		282						800	3 43				1 000	50 00	0 30	0 00	24.50 per 1,440 hour-inches.....	8 24		0 00	8 24	16 61	8 24	16 61	36 17	40 33	
Tehachapi Orchards Water Company.....	Tehachapi	1914	Wells.....	100			180					160	0 46	180	100 00	50 00	1 000	50 00	3 00	0 00	0.36 per day-inch.....	9 08	4 18	0 00	9 08	12 08	4 18	12 08	9 09	15 61	
Tehachapi Valley Water Company.....	Tehachapi	1911	Wells.....	135	100		400					400	0 45	786	100 00	1 000	100 00	6 00	0 45	0 45	0.65 per 30 inch-hours.....	13 11	5 90	0 00	13 56	19 56	5 90	19 56	14 11	27 44	
Tulare Irrigation Company.....	Visalia	1874	Kaweah River.....	0	0		140	1,600			2,540	3,100	12 70	321	100 00	75 00	0 100	7 50	0 45	1 78			0 00	0 62	1 78	0 62	1 78	0 23	0 66		
Uphill Ditch Company.....	Visalia	1901	St. John's River.....	0	0		124	1,143				1,873	12 00	700	10 00	40 00	0 350	14 00	0 84	0 98	None.....			0 00	0 98	1 82	0 98	1 82	0 56	0 83	
Watson Ditch Company.....	Visalia	1853	Kaweah River.....	0	0							3,000	12 00	610	100 00	50 00	0 200	10 00	0 60	1 12	None.....			0 00	1 12	1 72	1 12	1 72	0 56	0 86	
Waterbunnys Water Company.....	Visalia	1872	Kaweah River.....	0	0		5,600	900				7,500	12 50	91	1,000 00	1,800 00	0 012	21 60	1 30	1 94	None.....			0 00	1 94	3 24	1 94	3 24	0 78	1 30	

\* Estimated cost of system per acre.    b Includes Last Chance Water Ditch Company stock.    c Includes Peoples Ditch Company stock.    d Includes Last Chance Water Ditch Company assessments.    e Includes Peoples Ditch Company assessments.    f On basis of one miner's-inch for five acres.    g Twenty-five cents for first additional acre-foot.    h Fifty miner's inches equals one second-foot.    i Forty miner's-inches equals one second-foot.    j Estimated.    k Average unknown.





TABLE 38  
COST OF WATER FOR IRRIGATION IN CALIFORNIA  
Mutual water companies in southern California, 1922\*  
Reprint of Table 18 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Name of company	Location	Year organized	Source of water supply	Lift, feet	Percentage of water pumped	Area irrigated					Total, acres	Average duty of water per acre, acre-feet	Capital stock					Factors in annual cost of water					Annual cost of water						
						Citrus trees, acres	Deciduous trees, acres	Alfalfa, acres	Miscellaneous, acres	Number of shares issued			Par value of stock per share	Market value of stock per share	Average number of shares per acre	Value of stock per acre	Interest on value of capital stock per acre at 6 per cent	Average annual assessment per acre for past 5 years	Water rate		Water charge per acre for average amount used	Amount per acre deposited in sinking fund or charged to capital stock	For first acre-foot		Per acre, for average amount used		Per acre-foot, for average amount used		
																			Per hour-inch	Per acre-foot			Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	
Mutual Companies																													
Anaheim Union Water Company.....	Anaheim.....	1884	Santa Ana River.....	100	7,500	500				8,000	11 22	8,004	\$100 00	\$100 00	1 00	\$100 00	\$6 00	\$5 60	\$0 0120	\$7 26	\$8 86	\$1 25	\$11 61	\$17 61	\$13 21	\$19 21	\$10 83	\$15 75	
Arroyo Ditch and Water Company.....	Downey.....	1885	San Gabriel River.....	10	3,929					4,000	11 00	3,700	5 00	30 00	1 00	30 00	1 80	2 50	0055	3 33	3 33	0 10	5 73	6 73	5 73	7 53	5 73	7 53	
Azusa Irrigation Company.....	Azusa.....	1886	San Gabriel River.....							3,729	1 37	11,801	15 00	100 00	1 00	100 00	18 00	3 40	00487	2 95	4 04	1 00	5 55	23 55	6 64	24 64	4 85	17 88	
Banning Heights Mutual Water Company.....	Banning.....	1913	White Water River.....							14,000	11 00	14,000	15 00	0 00	150 00	6 00	None	0041	2 50	2 50	None	2 80	11 30	2 50	11 80	2 50	11 80		
Banning Water Company.....	Banning.....	1884	San Geronimo Creek.....				2,900			2,900	2 73	3,245	50 00	200 00	1 10	220 00	13 20	10 18	None	None	None	0 69	9 49	22 69	9 49	22 69	3 47	8 31	
Beaumont Water Ditch Company.....	Beaumont.....	1884	San Gabriel River.....							2,900	1 67	630	33 00	200 00	0 80	160 00	9 60	7 52	None	None	None	2 00	5 52	15 12	5 52	15 12	3 30	9 06	
Bear Valley Mutual Water Company.....	Redlands.....	1903	Santa Ana River.....							14,300	2 00	3,321	100 00	250 00	1 00	250 00	15 00	5 80	None	None	None	0 78	5 02	20 02	5 02	20 02	2 51	10 01	
Crafton Water Company.....	Redlands.....	1887	Bear Valley Mutual Water Company.....							1,800	2 00	1,411	100 00	225 00	1 10	225 00	13 30	12 00	None	None	None	0 76	10 64	24 14	10 64	24 14	5 32	12 07	
Redlands Heights Water Company.....	Redlands.....	1891	Crafton Water Company.....							1,200	2 00	1,411	100 00	150 00	1 10	150 00	9 00	8 50	None	None	None	1 31	7 79	21 01	7 79	21 01	3 90	8 40	
East Redlands Water Company.....	Redlands.....	1886	Bear Valley Mutual Water Company.....							200	1 89	100 00	100 00	1 00	100 00	13 00	13 00	13 00	None	None	None	0 40	10 40	18 01	10 40	18 01	6 35	9 53	
Lugonia Park Water Company.....	Redlands.....	1894	Bear Valley Mutual Water Company.....							200	1 89	100 00	100 00	1 00	100 00	13 00	13 00	13 00	None	None	None	0 40	10 40	18 01	10 40	18 01	6 35	9 53	
Redlands Water Company.....	Redlands.....	1882	Bear Valley Mutual Water Company and tunnel.....							1,380	2 11	1,500	100 00	100 00	1 00	100 00	6 54	7 10	None	None	None	0 08	6 12	12 66	6 12	12 66	2 90	6 00	
West Redlands Water Company.....	Redlands.....	1902	Bear Valley Mutual Water Company.....							806	2 00	806	100 00	125 00	1 00	125 00	7 50	15 00	None	None	None	5 03	18 47	10 67	18 47	5 49	9 24		
California Domestic Water Company.....	Whittier.....	1902	Bear Valley Mutual Water Company.....							1,400	1 60	8,005	100 00	100 00	1 00	100 00	10 80	15 50	None	None	None	2 62	20 80	13 28	20 80	23 30	13 05		
La Habra Water Company.....	La Habra.....	1902	California Domestic Water Company.....							3,000	1 60	5,095	50 00	150 00	1 50	270 00	10 20	24 00	None	None	None	None	13 28	21 88	27 62	13 28	21 88		
Carson Water Company of Pomona.....	Pomona.....	1897	San Antonio River.....							2,500	1 34	17,280	10 00	15 00	7 00	105 00	6 30	0 70	None	None	None	None	0 70	7 00	7 00	0 52	5 22		
Capistrano Water Company.....	Capistrano.....	1892	San Juan Creek.....				350			50	1 20	431	100 00	100 00	1 00	100 00	6 00	2 50	None	None	None	None	2 30	5 30	5 30	2 30	4 25		
Carnel Water Company.....	Montebello.....	1905	Wells.....							325	1 00	3,496	100 00	100 00	1 00	100 00	6 00	10 48	None	None	None	None	10 48	12 88	10 48	12 88	5 73	7 00	
Chino Water Company.....	Chino.....	1905	Wells.....	150			1,150		40	450	1 20	983	100 00	100 00	1 00	100 00	6 00	None	020	12 10	6 77	None	12 10	18 10	6 77	12 77	12 00	22 80	
Citrus Light and Water Company, Bloomington.....	Bloomington.....	1907	Wells.....	100						3,825	1 00	3,825	100 00	100 00	1 00	100 00	18 00	16 50	00908	1 26	1 67	None	10 48	12 88	10 48	12 88	5 73	7 00	
Covina Irrigation Company.....	Covina.....	1889	San Gabriel River.....					25	50	4,000	1 81	5,107	50 00	250 00	1 00	250 00	15 00	4 50	010	6 05	10 95	None	10 35	25 35	13 45	30 45	8 54	16 82	
Cucamonga Water Company.....	Cucamonga.....	1887	Wells, tunnels.....	100						4,500	1 56	10,000	57 00	100 00	3 00	300 00	18 00	16 50	00908	1 26	1 67	None	10 48	12 88	10 48	12 88	5 73	7 00	
Del Norte Irrigation Company.....	Pomona.....	1887	Wells.....	0-340						1,800	2 33	22,400	10 00	20 00	12 55	261 00	15 06	22 40	None	None	None	2 78	19 42	34 85	19 42	34 85	8 51	14 97	
Del Norte Water Company.....	Ventura.....	1910	Wells.....	100-320						80	0 30	2,500	10 00	17 50	1 03	17 50	1 03	0 90	025	4 01	None	15 13	4 54	None	16 61	37 98	5 44	0 49	18 13
Domiguez Water Company.....	Compton.....	1910	Wells.....	30-100						7 00	0 53	20,000	50 00	50 00	1 00	50 00	3 00	0125	4 56	None	None	None	16 01	16 01	16 01	16 01	18 13	21 63	
Duarte Mutual Irrigation and Canal Company.....	Duarte.....	1890	San Gabriel River.....	90						1,200	1 20	1,251	100 00	507 00	1 00	507 00	30 00	9 00	None	None	None	1 67	7 33	37 33	7 33	37 33	6 11	31 11	
Escondido Mutual Water Company.....	Escondido.....	1905	San Luis Rese River.....							1,000	1 20	2,450	100 00	2 00	150 00	18 00	7 75	0083	5 02	5 02	1 56	11 21	21 21	11 21	21 21	11 21	21 21		
Etowanda Water Company.....	Etowanda.....	1882	Tunnels.....							800	1 20	2,300	100 00	2 00	150 00	18 00	7 75	0083	5 02	5 02	1 56	11 21	21 21	11 21	21 21	11 21	21 21		
Fillmore Irrigation Company.....	Fillmore.....	1888	Sespe River.....							1,150	1 70	2,088	100 00	400 00	1 10	400 00	6 00	None	None	None	21 70	21 70	21 70	21 70	21 70	21 70	21 70		
Fontana Water Company.....	Fontana.....	1888	Lytle Creek.....	50-100						3,820	3 99	3,999	100 00	200 00	1 00	200 00	12 00	10 40	None	None	None	2 62	7 78	19 78	7 78	19 78	3 74	9 51	
Fontana Water Company.....	Fontana.....	1921	San Jacinto River.....							1,144	2 64	4,000	100 00	200 00	1 10	200 00	12 00	10 40	None	None	None	2 62	7 78	19 78	7 78	19 78	3 74	9 51	
Gage Canal Company.....	Glendora.....	1884	Santa Ana River, wells.....							6,144	2 78	12,238	50 00	70 00	1 13	65 88	18 00	None	040	2 96	6 10	0 04	43 08	12 28	10 28	15 43	4 65	7 42	
Glendora Consolidated Mutual Irrigation Company.....	Glendora.....	1920	Wells.....	450						2,050	1 18	5,040	100 00	90 00	207 00	12 42	25 20	20 00	015	9 08	21 70	None	6 21	48 29	55 71	47 65	60 07	40 30	50 01
Hudson Water Company.....	Hudson.....	1922	La Verne Water Company.....							75	3 00	300	100 00	4 00	400 00	24 00	None	015	9 08	21 70	None	6 21	48 29	55 71	47 65	60 07	40 30	50 01	
Irrigation Company of Pomona.....	Pomona.....	1886	Wells.....	215						2,000	1 08	24,800	100 00	30 00	10 00	30 00	1 50	1 80	0015	1 00	3 00	None	6 30	13 50	13 50	13 50	9 08	19 12	
Imperial Irrigation District.....	Imperial.....	1911	Colorado River.....							121,169	3 00	99,069	10 00	25 00	0 80	20 00	1 20	2 32	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77	
Imperial Water Company No. 1.....	Holtville.....	1900	Imperial Irrigation District.....							6,000	1 00	6,000	10 00	20 00	1 00	20 00	2 13	4 50	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77	
Imperial Water Company No. 2.....	Holtville.....	1913	Imperial Irrigation District.....							45,000	3 00	48,624	10 00	20 00	1 00	20 00	2 13	4 50	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77	
Imperial Water Company No. 3.....	Calipatria.....	1913	Imperial Irrigation District.....							155	1 66	12,000	32,689	10 00	20 00	1 00	20 00	2 13	4 50	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77
Imperial Water Company No. 4.....	Calipatria.....	1900	Imperial Irrigation District.....							20,000	3 00	18,801	10 00	15 00	1 00	15 00	0 90	2 20	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77	
Imperial Water Company No. 5.....	Holtville.....	1901	Imperial Irrigation District.....							80,000	3 00	89,941	10 00	12 50	0 94	11 75	0 70	2 24	00105	1 00	3 00	None	5 12	6 32	7 12	8 32	2 37	7 77	
Imperial Water Company No. 6.....	Calipatria.....	1901	Imperial Irrigation District.....							18,000																			





TABLE 38—Continued  
 COST OF WATER FOR IRRIGATION IN CALIFORNIA  
 Mutual water companies in southern California, 1922\*  
 Reprint of Table 18 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Name of company	Location	Year organised	Source of water supply	Lift, feet	Percentage of water pumped	Area irrigated					Average duty of water, acre-feet	Capital stock					Factors in annual cost of water					Annual cost of water						
						Citrus trees, acres	Deciduous trees, acres	Alfalfa, acres	Miscel- laneous, acres	Total, acres		Number of shares issued	Par value of stock per share	Market value of stock per share	Average number of shares per acre	Value of stock per acre	Interest on value of capital stock per acre at 6 per cent	Average annual assessment per acre for past 5 years	Water rate		Water charge per acre for average amount used	Amount per acre deposited in sinking fund or charged to capital stock	For first acre-foot		Per acre, for average amount used		Per acre-foot, for average amount used	
																			Per hour-inch	Per acre-foot			Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock	Excluding interest on value of capital stock	Including interest on value of capital stock
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Rincon Ditch Company.....	Whittier.....	1913	San Gabriel River.....	.....	0	150	651	*	*	974	1.66	974	\$25.00	.....	1.00	\$25.00	\$1.50	\$5.00	None	None	None	None	\$5.00	\$6.50	\$5.00	\$6.50	\$3.01	\$3.91
Riverside Water Company.....	Riverside.....	1885	Santa Ana River.....	.....	0	1,733	350	.....	2,255	8,058	2.47	10,271	10.00	\$75.00	2.00	150.00	9.00	None	None	None	\$8.00	None	\$8.00	17.00	8.00	17.00	3.00	6.37
San Antonio Irrigation Company.....	Donkey.....	1869	Rio Hondo River.....	.....	0	.....	.....	300	.....	800	2.70	8,224	5.00	5.00	8.00	41.00	2.40	3.20	None	None	None	None	3.20	5.00	3.20	5.00	1.19	2.07
San Antonio Water Company.....	Ontario.....	1882	San Antonio River.....	.....	180	40	.....	.....	.....	5,000	2.30	6,064	100.00	350.00	1.21	425.50	25.41	11.00	None	None	None	\$2.00	9.00	34.41	9.00	34.41	3.91	14.95
San Cayetano Mutual Water Company.....	Santa Paula.....	1913	Wells.....	.....	100	5,000	100	.....	.....	500	1.22	1,231	50.00	\$7.25	2.00	114.50	6.87	2.50	\$0.03306	\$20.00	24.40	None	22.50	29.37	26.90	33.77	22.03	27.67
Orange.....	Orange.....	1877	Santa Ana River.....	.....	75	25	*	.....	.....	17,428	1.69	17,428	5.00	134.49	1.00	134.49	8.07	1.65	.0048	2.90	4.90	1.65	2.90	10.07	4.90	12.97	2.90	7.68
San Luis Water Company.....	San Luis.....	1894	Wells.....	.....	200-350	2,200	.....	.....	.....	2,200	1.38	2,300	100.00	200.00	1.00	200.00	12.00	11.60	.0214	12.95	17.87	1.35	23.19	35.19	23.11	40.11	20.38	49.78
Satony Development Company.....	Satony.....	1902	Wells and canyon.....	.....	165	.....	628	.....	.....	528	1.16	528	40.00	40.00	1.00	40.00	2.40	7.20	.0178	10.80	12.53	7.20	10.80	13.20	12.53	14.03	10.60	12.87
South Mountain Water Company.....	Redlands.....	1899	Wells and canyon.....	.....	50	500	.....	.....	.....	500	2.08	1,000	100.00	100.00	2.02	200.00	12.00	13.00	None	None	None	2.40	10.60	22.60	10.60	22.60	5.10	10.80
South Side Improvement Company.....	Pittsburg.....	1887	Santa Clara River, wells.....	.....	26	38	1,800	150	.....	1,450	2.50	2,916	10.00	29.50	2.00	59.00	3.54	None	.0033	2.00	5.00	None	2.00	5.54	5.00	8.54	2.00	3.42
Standard Water Company.....	Riverside.....	1902	San Gabriel River.....	.....	0	900	452	.....	.....	1,352	1.70	13,325	1.00	.....	10.00	10.00	0.60	0.70	.0075	0.45	0.77	None	1.15	1.75	1.47	2.07	0.86	1.22
Sunny Slope Water Company.....	Lamanda Park.....	1895	Wells.....	.....	153	100	1,400	.....	.....	1,400	0.85	1,400	100.00	125.00	1.00	125.00	7.50	5.50	.0168	10.15	8.03	1.18	14.47	21.97	12.95	20.45	15.24	24.05
Temescal Water Company.....	Corona.....	1897	San Jacinto River, wells.....	.....	85	50	4,682	.....	.....	4,682	1.05	8,606	100.00	117.50	1.00	117.50	12.87	27.60	None	None	None	6.77	20.83	33.80	20.83	33.80	12.87	20.48
Thermal Belt Water Company.....	Santa Paula.....	1893	Santa Paula Creek, wells.....	.....	87	1,275	300	.....	.....	1,575	1.61	1,500	100.00	300.00	1.00	300.00	18.00	7.20	.00525	3.78	6.69	1.60	9.38	27.38	11.60	29.60	7.26	18.45
Trabuco Water Company.....	Cajon.....	1892	Trabuco Creek, wells.....	.....	40	38	350	.....	.....	350	2.00	350	100.00	100.00	1.00	100.00	6.00	3.50	None	None	None	None	3.50	9.50	3.50	9.50	4.75	4.75
Walnut Grove Mutual Water Company.....	Monrovia.....	1896	Wells.....	.....	80	100	781	50.00	.....	781	2.78	781	50.00	.....	1.00	50.00	3.00	2.40	.0225	13.61	37.84	2.05	14.05	17.05	38.28	41.28	17.77	14.85
Whittier Extension Mutual Water Company.....	North Whittier.....	1913	Wells.....	.....	174-418	100	2,000	.....	.....	2,000	0.77	2,500	100.00	203.00	1.00	200.00	12.00	2.40	.0325	19.66	15.14	None	22.66	34.06	17.54	22.78	38.37	38.37
Yorba Linda Water Company.....	Yorba Linda.....	1909	Wells.....	.....	302	100	2,500	.....	.....	2,500	1.14	2,750	100.00	75.00	1.00	75.00	4.50	34.80	None	None	None	3.85	20.05	25.45	20.05	25.45	18.38	22.32
Yucapa Water Company No. 1.....	Yucapa.....	1910	Wells; tunnels.....	.....	250	60	2,600	.....	.....	2,600	1.16	3,500	100.00	125.00	1.00	125.00	7.50	11.40	.0125	7.56	8.77	2.08	16.88	24.38	18.09	25.59	15.60	22.03

\*This table prepared in cooperation with D. A. Lane, Assistant Engineer of Los Angeles City Water Department.

\*Companies absorbed by district late in 1922.

\*Estimated.

\*Acreage unknown.





TABLE 39  
COST OF WATER FOR IRRIGATION IN CALIFORNIA  
Private pumping plants in Sacramento Valley, 1922  
Reprint of Table 30 of Bulletin No. 8, "Cost of Water to Irrigators in California"

Plant					Well			Pump			Acreage irrigated		Cost of plant		Annual costs for plant				Annual cost per acre-foot pumped				Annual cost of water						
No.	Location	Year installed	Size of motor, horse-power	Overall plant efficiency, per cent	Size, inches	Depth, feet	Depth to static water, feet	Total hours operated	Lift, feet	Discharge, cubic feet per second	Total acres	Kind of crops	Duty of water per acre, acre-feet	Cost of plant		Annual costs for plant				Annual cost per acre-foot pumped				Annual cost of water					
														Total	Per acre irrigated	Power bill	Estimated attendance	Interest on cost of plant at 6 per cent	Taxes, insurance, depreciation, repairs, renewals (estimated)	Power bill	Attendance	Fixed charges		Excluding interest on cost of plant	Including interest on cost of plant	Excluding interest on cost of plant	Including interest on cost of plant	Excluding interest on cost of plant	Including interest on cost of plant
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Electric																													
1	Dixon	1911	10	42.3	12	72	37	570	40.0	0.67	13	Alfalfa	2.45	\$1,100	\$84.62	\$118.29	\$22.80	\$66.00	\$99.00	\$3.71	\$0.71	\$2.07	\$3.10	\$7.52	\$9.59	\$18.42	\$23.50	\$0.188	\$0.240
2	Dixon	1918	15	60.0	0	0	0	955	40.0	1.75	130	Orchard	1.07	750	5.77	242.63	38.20	45.00	67.50	1.74	0.27	0.32	0.48	2.49	2.81	2.86	3.01	0.062	0.070
3	Dixon	1915	7½	22.0	100	42	100	561	42.0	0.32	7	Alfalfa	2.16	800	114.29	83.21	22.64	48.00	72.00	5.49	1.48	3.17	4.75	11.72	14.89	25.31	32.18	0.279	0.355
4	Dixon	1918	10	18.5	100	37	100	1,215	42.0	0.88	30	Alfalfa	2.96	1,000	33.33	271.00	48.60	60.00	90.00	3.05	0.55	0.88	1.01	4.61	5.29	13.65	15.55	0.110	0.126
5	Dixon	1918	30	42.5	12	125	39	1,366	42.0	2.27	70	Alfalfa	3.69	1,500	21.43	470.29	54.64	90.00	135.00	1.83	0.21	0.39	0.52	2.55	2.91	9.44	10.74	0.061	0.070
6	Dixon	1918	35	42.0	200	35	1,710	43.0	2.40	76	Alfalfa	4.50	2,450	32.24	697.25	68.40	147.00	220.50	2.04	0.20	0.43	0.94	2.88	3.31	12.96	14.90	0.067	0.077	
7	Dixon	1918	25	37.0	150	35	1,240	45.0	1.91	65	Alfalfa	3.05	2,450	37.69	444.55	49.84	147.00	220.50	2.25	0.25	0.40	0.74	1.11	4.35	11.02	13.27	0.080	0.097	
8	Dixon	1918	40	34.6	120	35	1,740	45.0	2.53	76	Alfalfa	4.80	2,450	32.24	754.29	69.00	147.00	220.50	2.07	0.19	0.40	0.60	2.86	3.36	13.73	15.55	0.064	0.072	
9	Dixon	1918	25	32.0	120	35	925	45.0	1.94	46	Alfalfa	3.24	2,450	63.26	387.25	37.00	147.00	220.50	2.60	0.25	0.99	1.48	4.33	5.32	14.03	17.24	0.096	0.118	
10	Dixon	1916	15	29.7	12	100	32	920	45.0	0.79	25	Alfalfa	2.43	1,000	40.00	269.73	36.80	60.00	90.00	4.44	0.61	0.99	1.48	6.33	7.52	16.87	18.27	0.145	0.167
11	Dixon	1921	10	62.6	12	96	34	631	46.5	1.05	20	Alfalfa	1.25	61.75	173.11	25.24	74.10	115.15	2.90	0.42	1.24	1.66	8.18	6.42	15.43	19.13	0.111	0.138	
12	Dixon	1922	28	39.5	200	35	499	48.0	2.04	70	Alfalfa	1.21	2,450	35.00	380.84	19.96	147.00	220.50	2.31	0.22	1.73	2.80	6.14	7.57	7.43	9.53	0.126	0.164	
13	Dixon	1910	10	39.0	90	40	2,417	50.0	1.10	20	Alfalfa	1.63	800	40.00	600.35	99.68	48.00	72.00	2.26	0.44	0.22	0.33	3.25	3.35	33.45	35.85	0.061	0.065	
14	Davis	1919	35	15.2	12	265	18	213	35.9	1.11	40	Trees, alfalfa	1.63	2,890	99.70	162.57	24.32	161.40	242.10	2.89	0.43	2.87	4.30	7.62	10.49	12.42	17.10	0.212	0.292
15	Davis	1919	25	15.2	12	265	18	213	42.0	0.71	40	Trees, alfalfa	1.63	2,890	99.70	162.57	24.32	161.40	242.10	2.89	0.43	2.87	4.30	7.62	10.49	12.42	17.10	0.212	0.292
16	Davis	1912	10	62.0	12	125	18	362	44.0	1.46	10	Alfalfa	4.40	1,000	100.00	97.12	14.48	60.00	90.00	2.21	0.33	2.36	2.05	4.59	5.95	20.20	26.20	0.104	0.135
17	Davis	1922	20	15.4	12	109	18	404	40.0	0.85	12	Alfalfa	2.39	2,500	208.33	156.99	16.16	150.00	225.00	5.47	0.56	5.22	7.84	13.87	19.09	33.13	45.63	0.246	0.246
18	Davis	1922	20	46.8	12	130	18	519	46.0	1.26	60	Pasture, alfalfa	0.67	2,225	44.50	148.40	12.76	335.50	290.25	4.43	0.38	3.98	5.97	10.78	14.76	7.23	9.89	0.180	0.246
19	Davis	1915	20	26.0	12	133	14	344	62.0	0.81	12	Alfalfa	1.94	1,100	91.67	141.99	13.76	60.00	99.00	4.09	0.59	4.23	4.25	10.33	13.78	21.20	26.70	0.177	0.222
20	Davis	1920	25	56.0	12	141	50	627	73.0	1.64	40	Alfalfa	1.57	2,590	64.75	254.17	25.08	155.40	233.10	4.06	0.40	2.47	3.71	8.16	10.63	16.70	21.12	0.112	0.140
21	Woodland	1905	100	25.1	12	200	17	1,194	30.0	8.34	200	Alfalfa	4.15	12,000	60.00	1,814.71	47.76	720.00	1,080.00	1.94	0.06	0.87	1.90	3.30	4.17	13.70	17.30	0.110	0.139
22	Winters	1919	40	50.0	12	86	27	527	47.0	3.57	80	Miscellaneous	2.23	3,000	37.50	435.23	23.98	180.00	270.00	2.44	0.13	1.01	1.52	4.09	5.10	9.12	11.37	0.087	0.108
Distillate																													
23	Winters	1915	18	37.0	36	21	453	28.0	1.85	21	Alfalfa	3.35	2,000	95.24	81.60	45.30	120.00	280.00	1.16	0.64	1.70	3.98	5.78	7.48	10.37	25.08	0.206	0.267	
24	Winters	1919	20	32.0	12	187	35	750	46.0	1.23	37	Orchard	2.07	1,250	33.78	153.00	75.00	75.00	175.00	2.00	0.98	0.98	2.29	5.27	6.25	10.92	12.94	0.115	0.136
25	Woodland	1920	65	48.0	12	17	504	25.0	8.44	120	Miscellaneous	2.97	13,500	112.50	393.60	393.60	201.60	810.00	1,800.00	1.10	0.57	2.28	5.31	6.98	9.26	20.72	27.60	0.279	0.370





TABLE 40

COST OF WATER FOR IRRIGATION IN CALIFORNIA  
Private electric pumping plants in central California, 1923  
Reprint of Table 32 of Bulletin No. 8, "Cost of Water to Irrigators in California"

No.	Location	Plant			Well			Pump		Acreage irrigated		Duty of water per acre, acre-feet	Cost of plant		Annual costs for plant				Annual cost per acre-foot pumped				Annual cost of water							
		Year installed	Size of motor, horsepower	Overall plant efficiency, per cent	Size, inches	Depth, feet	Depth to static water, feet	Total hours operated	Lift, feet	Discharge, cubic feet per second	Total acres		Kind of crops	Total	Per acre irrigated	Power bill	Estimated attendance	Interest on cost of plant at 6 per cent	Taxes, insurance, depreciation, repairs, renewals (estimated)	Power bill	Attendance	Interest	Taxes, insurance, depreciation, repairs, renewals	Per acre-foot		Per acre		Per acre-foot		
																								Interest on cost of plant	Excluding interest on cost of plant	Including interest on cost of plant	Excluding interest on cost of plant	Including interest on cost of plant	Excluding interest on cost of plant	Including interest on cost of plant
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	
26	San Jose	1911	30	38.9	10	80	20	830	29.0	1.06	80	Prunes	1.67	\$1,500	\$18.75	\$284.52	\$32.80	\$90.00	\$135.00	\$2.12	\$0.24	\$0.67	\$1.01	\$3.37	\$4.04	\$5.63	\$6.75	\$10.16	\$0.116	\$0.139
27	San Jose	1916	15	34.0	10	130	30	363	39.2	1.12	65	Nursery	0.62	1,370	21.08	129.00	14.52	82.20	123.20	3.78	0.43	2.42	3.63	7.84	10.26	4.08	6.34	0.200	0.252	0.282
28	San Jose	1912	35	53.3				454	48.0	2.82	80	Prunes	1.33	3,300	41.25	306.60	18.16	198.00	297.00	2.88	0.17	1.86	2.79	5.84	7.70	7.77	10.24	0.122	0.160	0.188
29	Los Gatos	1912	20	35.3				937	70.0	0.48	75	Orchard	0.60	2,000	25.37	199.73	37.48	120.00	180.00	5.28	0.99	3.17	4.70	11.03	14.20	8.61	7.10	0.158	0.203	0.231
30	San Jose	1912	20	37.5	16	494	25	638	71.0	3.20	90	Pears, plums	1.88	6,535	72.81	494.27	25.52	392.10	588.15	2.92	0.15	2.91	3.47	6.54	8.85	12.90	16.64	0.092	0.125	0.150
31	San Jose	1912	20	37.5	16	494	25	638	71.0	3.20	90	Pears, plums	1.88	6,535	72.81	494.27	25.52	392.10	588.15	2.92	0.15	2.91	3.47	6.54	8.85	12.90	16.64	0.092	0.125	0.150
32	San Jose	1912	20	37.5	16	494	25	638	71.0	3.20	90	Pears, plums	1.88	6,535	72.81	494.27	25.52	392.10	588.15	2.92	0.15	2.91	3.47	6.54	8.85	12.90	16.64	0.092	0.125	0.150
33	Mountain View	1918	20	20.7	12	125	27	738	84.0	0.70	50	Fruit	0.88	2,800	56.00	209.58	29.52	168.00	252.00	6.24	0.88	3.89	5.83	12.71	16.64	10.16	14.12	0.152	0.188	0.216
34	San Jose	1912	25	53.4				688	85.0	1.07	77	Prunes, apricots	0.54	7,454	82.94	500.00	42.80	300.00	450.00	7.41	0.84	4.81	7.21	14.00	19.51	11.90	15.86	0.048	0.073	0.087
35	San Jose	1912	20	28.8				276	71	0.77	71	Prunes, apricots	0.81	5,000	65.00	438.17	27.92	300.00	450.00	7.41	0.84	4.81	7.21	14.00	19.51	11.90	15.86	0.048	0.073	0.087
36	San Jose	1912	20	29.4	24	210	60	740	103.8	0.78	60	Prunes, peaches	0.61	4,450	74.17	417.50	29.00	267.00	400.00	8.55	0.61	5.84	8.20	17.09	22.53	14.05	18.50	0.167	0.230	0.260
37	San Jose	1912	20	43.2	16	412	111	1,106	131.5	2.00	280	Prunes, apricots	0.66	12,000	42.86	1,127.74	20.44	720.00	1,080.00	6.10	0.54	12.85	18.17	38.04	50.04	0.093	0.123	0.148	0.173	0.200
38	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
39	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
40	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
41	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
42	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
43	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
44	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
45	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
46	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
47	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
48	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
49	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
50	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
51	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
52	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
53	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
54	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
55	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
56	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
57	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
58	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
59	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
60	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
61	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
62	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
63	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots	0.71	4,150	50.00	470.53	31.92	240.00	360.00	8.14	0.55	4.25	6.38	15.67	19.32	10.70	13.71	0.108	0.138	0.165
64	San Jose	1912	20	36.8				139	82	0.66	92	Peaches, apricots																		





1.4  
E-334C  
Reserve

# COST OF IRRIGATION WATER IN CALIFORNIA★

By ~~Harry F. Blaney~~

HARRY F. BLANEY, *Irrigation Engineer,*

DIVISION OF IRRIGATION,

BUREAU OF AGRICULTURAL ENGINEERING

U. S. DEPARTMENT OF AGRICULTURE

---

("Prepared under the direction of W. W. McLaughlin, Chief, Division of Irrigation, Bureau of Agricultural Engineering, U. S. Department of Agriculture. Abstract of State of California, Department of Public Works, Bulletin No. 8, "Cost of Water to Irrigators in California," and Bulletin No. 36, "Cost of Irrigation Water in California.")

BERKELEY, CALIFORNIA

NOVEMBER, 1932

DEC 5 1941

100000  
111111



ALL  
ALL















